

THE INVISIBLE RAIDERS: Great War-Flying Adventure

AIR ^{7^D} STORIES



THE GENTLEMAN FROM JAVA

FEBRUARY

THRILLING SECRET SERVICE ADVENTURE BY CAPT. J.E.GURDON, D.F.C.

"D's" FOR DAVID

BY LT. CMDR. M.O.W. MILLER

AFTER THE RED BARON

BY JOHN HOOK

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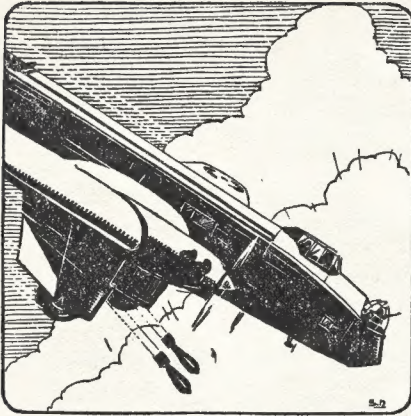
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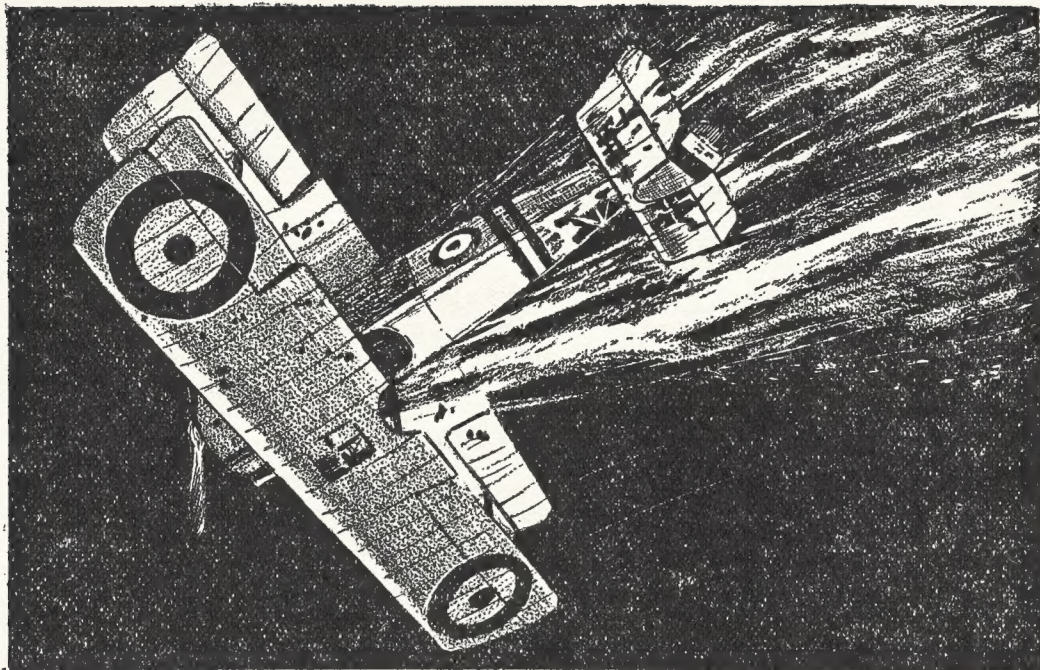
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S. ORIGIN

Easing his dive, the Stumbler glued his eyes on that falling figure . . .

A Long Complete Mystery Thriller of an R.F.C. Scout Squadron on the Western Front



... lit up by the blazing wreckage of the tumbling Camel

THE INVISIBLE RAIDERS

Silent and Unseen, the Raiders of the Night Baffled Pursuit with Uncanny Ease to Sow Death and Destruction within the British Lines—until the Flaming Torch of a Doomed Defender Revealed the Secret of the Phantom Squadron

By ROBERT MAGNUS

(Late of the Royal Flying Corps)

CHAPTER I

They Called Him Stumbler

THE messroom was quiet. Beyond the broken and paper-patched windows of what had once been a pleasant, country chateau, five efficient-looking Sopwith Camels were ranged in orderly formation. Chocks were at their wheels, and the mechanics who moved briskly about them, clanking spanners, could be heard whistling in distant cheerfulness.

Beyond the Camels was a vast stretch of warm sky fading yellow with the death of the summer afternoon. Occasionally there came a grumble of gunfire

—an almost imperceptible concussion which caused tiny ripples within the teacups on the mess table.

Otherwise, all was peace.

The men around the table munched bread and jam, smoked over empty plates, re-read week-old letters or patriarchal newspapers. At the head of the table Captain Kenneth Hardy, M.C., frowned over a collection of buff chits from Wing Headquarters and meditatively scratched an ear. At his side, Lieutenant Stephen Stumperton absently stirred his tea with a butter-knife and studied a mathematical textbook propped up against a jam pot.

In the early summer of 1914, few

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people had believed that a war could start. Now, in the early summer of 1918, no one—including the present company—could bring themselves to believe that it would ever end.

Still, like everything else, it wasn't so bad when you got used to it. Lieutenant Stumperton had more than once pointed out during the last few weeks that the Hun had had the right ideas all along. The Hun uncorked his machine-guns, sent over his "heavies," despatched his scout-patrols and bombing raids all at exact times; in brief, with business-like regularity and method. That relieved everyone of worry and anxiety. It encouraged a man to make himself at home and take an interest in a job that was obviously a permanency.

Lieutenant Stumperton's confidence in the German sense of order, however, was due to be shaken.

"YOU know," said Captain Hardy, suddenly sitting back from his papers, "You know, Stumbler, this is queer. I always said you could never trust Fritz. He's up to some monkey-trick or other."

"Um?" asked the Stumbler, who had earned his nickname by reason of certain little peculiarities of deportment. "Eh?"

He looked up with a distant expression. To mark his place, he placed the end of the dripping butter-knife against a line in the book which recorded a particularly knotty point in the gravitational calculations of the scientist Newton. The not-unnatural result was that the jam pot toppled over and a sticky mass of plum-and-apple invaded the cloth.

"What's that?" asked the Stumbler. "Oh, I'm sorry—oh, damn—I!"

He made a grab, in which he succeeded in pushing the textbook into the spilt jam and knocking over a milk jug. His comrade on the opposite side of the table heaved up cursing, and staggered out of the way of the white stream that swept over the table-edge.

"You stumbling, awkward, dangerous, fumble-fingered——" he spluttered.

"Sorry, Willie," gasped the Stumbler.

"Here, wait a minute—'Kissme,' hold this for a minute. I'll mop up. I've got a handkerchief somewhere——"

He thrust a jam-covered textbook into Captain Hardy's nerveless hands. He heaved up—and caught his knees under the table so that Captain Hardy's cup spun and cataracted into its saucer.

According to King's Regulations, personal combat between commissioned officers, especially between an officer and his superior, is a crime of the first order. If King's Regulations are to be taken seriously, Captain Hardy became a criminal.

He slammed the jam-covered book on to the back of the Stumbler's head. He jumped aside and yelled orders, grabbing the Stumbler by the waist. The other members of that hitherto-peaceful tea-party fell upon the Stumbler from different directions, carried him bodily across the Mess, kicked the door open, and deposited him with a dull thud outside.

Singularly and collectively, his senior and brother officers thereupon dared him to return. They said he wasn't safe. They said he'd never been able to walk through any room without catching his feet in the furniture and half wrecking the place. They told each other that he ought to be made to eat alone in a room designed on the lines of a bomb-shelter, with table appointments that could be screwed down.

A jammy book came out of the door, bounced on the Stumbler's head, and the door shut with a bang. The Stumbler crawled away. Sadly, he retrieved his beloved textbook and meditated upon the harsh ways of intolerant mankind.

He might have meditated more profitably on the strange contradiction of his own character, whereby that fault of absent-minded awkwardness completely vanished from him once he was in the air, and left him one of the finest pilots of a fighting Camel on the Western Front.

Actually, the secret was a simple one, according to modern-day standards of psychology. Your born student is one who concentrates completely on the things that interest him most. He views the

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rest of life with only about five per cent. of his conscious brain.

The Stumbler was interested in flying, and mathematics. Being young and healthy, he had another interest which took up only a very small part of his consciousness. He called it art, and his ideas on that much misused word were simple, and largely confined to the more decorative of Parisian journals and the artistic inspirations of Kirchner. But, at the moment, his hair was full of jam and his vocabulary was the most artistic thing about him as he heaved himself to his feet.

And then he caught sight of the sergeant with the mail.

Lieutenant Stumperton forgot the harshness of his comrades, the War, the mention of some German trickiness he vaguely remembered someone talking about. He gave a wild whoop of joy and made a delighted plunge.

But the sergeant knew him of old, and backed hurriedly against a wall for extra support.

CHAPTER II

Fighters of the Night

THE Patrol Emergency Call caught the Stumbler poaching. His mail had been a mixture of art and utility—a rolled-up copy of an illustrated weekly from a bookseller in Paris and a circular from his old technical college at home. In his comrades' present playful mood the Stumbler knew that it would be highly dangerous to be seen reading the first, either in the anteroom or in one of the sleeping huts. It was a journal very popular with all ranks. The second he could have read anywhere without the slightest risk of anyone taking it away from him.

Art, however, conquered him for the moment. He sought the safest place possible—Captain Hardy's own sacred chair in Captain Hardy's almost painfully-neat and tidy room in the Squadron Office. The Stumbler, tranquil at last, lit a cigarette with slightly jammy fingers, and turned the pages of the illustrated weekly.

Then he started as the brazen ringing of an eighteen-pounder shell-case, beaten by a spanner, echoed across the aerodrome.

With one movement, he thrust his weekly beneath a large records-book on the captain's desk, crossed the room, and departed out of the door as suddenly as he had left the mess only a quarter of an hour earlier. He cannoned into a running orderly and sent the man flying. Staggering, he raced on into his own hangar and grabbed down a Sidcot suit and helmet with such force that the entire hook-panel came adrift from its moorings and deposited everything it carried on to the muddy floor.

The pilots came racing in as the Stumbler hopped and danced out, trying to scramble into his suit while he ran. He managed to hop on to one of Captain Hardy's feet, and left that gallant warrior giving a spirited imitation of a stork while the rest of the pilots milled round and cursed quite frightfully as they tried to find their own gear amongst the fallen jumble.

Lieutenant Stumperton was first in his machine, helmeted, belted-up and ready to take-off. He felt a pleasant glow of virtue as he saw his respected leader limp to the front machine and clamber up, feverishly at work with buckles and buttons. Then the flight was away, streaking across the dusky aerodrome and rising in a graceful curve, while deafened mechanics staggered below and hunched their shoulders against a gale.

Captain Hardy in the leading machine wriggled paralysed toes at the end of a deadened foot, and made the sort of remarks that should never be allowed near a naked flame. He glanced to the left and beheld Willie Wilson stolidly in his place at No. 2. He shot a homicidal glance to the right where the Stumbler was slogging along with cheerful exhilaration at No. 3. Two more nicely-tuned B.R.2 Camels completed the flukes of the arrowhead in the rear.

A nice, tight formation, and good lads, all of them—thought Captain Hardy, reluctantly admitting to himself that

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Public Danger No. 1, Stephen Stumperton, was harmless enough when on the wing. Harmless, that is, to all save the enemy.

"But I'll *brain* him when we get back!" Captain Hardy ruminated as his foot throbbingly came back to life. "I'll have him put in a strait-jacket. I'll have his meals served to him in his bath. I'll . . ."

Captain Hardy levelled-off at somewhere about six thousand feet and surveyed the darkening horizon with a frown. He was looking for bombers. It was an occupation which had begun both to bore and irritate him, since it was the sixth evening he had been called upon to carry it out.

And each time it had been entirely without success.

"It's funny!" muttered Captain Hardy, fiddling with his Sidcot-collar through which a pinhole of icy wind was playing on to his Adam's apple. "It's darned funny. Cutting-out the first night, those beggars simply couldn't have got through without us seeing them, if the report from Headquarters is right. We couldn't have missed 'em. Somebody at Headquarters must be up the pole."

SOMEbody at Headquarters, forty miles in the rear, was at that moment very nearly echoing Captain Hardy's sentiments.

He was a tall officer with a tired but clever face, red tabs on his coat-lapels, and wearing an expression of violent irritation.

"Up to his tricks again?" he snapped echoing the remark of another official. "The Hun is most certainly up to tricks again! And he's got *me* up a gum-tree this time! Look here, you Intelligence people have just got to take life seriously, for once. Six times now you've notified me of five Hun night-bombers coming over from one certain direction——"

He tapped the map spread out on the big table before him.

"Six times I've had my best single-seater squadron off the ground inside two minutes," he went on acidly, "and they've not so much as smelt those raiders' exhausts! *Six times*——"

He dropped his hands to his sides rather helplessly.

"Look here, Barton," he said, facing the other: "This is not only serious—it's idiotic. I've had my supply columns bombed, I've had dumps blasted out of existence, I've had rest-camps, roads, railheads, all plastered for a week on end. Now that wasn't done by a squadron of German *ghosts*! But they got here and they sneaked off home every time without getting as much as a thick ear. Without even being *seen*!"

The Intelligence Officer shook his head and fiddled with a pencil.

"I can't understand it any more than you, sir," he said wearily. "Our information from the other side is reliable. I can swear to it. We've got really excellent men there. Through our own special channels I've had them contacted—checked every report they've sent over."

The tall officer lit a cigarette somewhat viciously. He blew a cloud of smoke. His voice became almost caressing.

"I've an idea," he said gently. "Why not start using agents who know the German language *already*?"

War has a coarsening effect on the best and kindest of men.

CAPTAIN HARDY hunted high and low. He took his patient followers up into the cold and lonely wastes beyond twenty thousand feet. He brought them down within the hinterland of the German back areas and skimmed affronted and startled Teutonic heads by what seemed like inches.

But he found no bombers.

He did, however, find outbursts of German indignation. In fact, those below left their beds and ran for machine-guns, ack-acks and even *minenwerfers*, with which they pelted the Squadron as the disturbed occupants of a suburb break up a cats' concert with old boots. The disturbers of the peace did a little machine-gunning of their own, here and there, if only to be civil.

But they found no bombers.

German telephone-wires hummed and grew hot. War was war, but this sort

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of thing at such a late hour was beyond a joke. At an advanced German aerodrome, pilots went running to an emergency call and took a seven-strong formation of Fokker D.7s up into the hazy night.

Your German is a truly methodical person. The rising Fokkers had been timed-off just nicely to be right in Captain Hardy's homeward path, within half a mile of the lines. Haze or no haze, they were bound to meet.

They did—just as Lieutenant Stumpton was beginning to get uneasy.

UP to that moment the Stumbler had quite enjoyed himself. His machine was running well, and it was good fun putting partings in Fritz's hair with your undercarriage-wheels, and making him bunk like billyho in his nightshirt.

Back behind Lille, too, there had been quite an interesting detail he had not noticed before, for the very good reason that never before had he flown so suicidally low. But, near to, the battered countryside showed a mass of holes, shallow burrowings into the earth with dump-heaps flattened and scattered around.

"I suppose the photographers have got it already," mused the Stumbler. "Still, it'll be worth a mention when I get back. Wonder if Kissme spotted it? Fritz is obviously pushing forward saps to make a whacking great mine. But what a distance! Must be about fifteen miles to the lines from here. And if he is really going to plant a mine, it'll be underneath the trenches somewhere south of Messines."

The Stumbler eased himself in his seat. "Golly, what a job!" he reflected. "That's certainly one thing about Fritz, he likes doing things on a big scale. Well, I'll turn in a report and—*golly!*"

With the sap-openings dropping astern of him at somewhere about two miles a minute, the Stumbler gave vent to his last remark because he had suddenly thought of—art. He had suddenly remembered that French illustrated periodical left in Captain Hardy's office.

The captain was tidy and methodical,

but his orderly-sergeant was even more so. Unless the Squadron got back pretty soon, that same orderly-sergeant would be bound to go to the office for a final clear-up. He'd shift that records-book—and he'd find the periodical underneath it. And that, without any doubt at all, would be the last that Lieutenant Stumpton would ever see of the periodical.

The Stumbler fumed. One picture in this week's issue had especially caught his eye. It was a delightful picture. He especially wanted to keep it.

Whereupon the Stumbler said "Golly!" again with some suddenness, and jerked his stick forcibly back into his stomach. He kept it in that position for possibly twenty-five seconds while his machine made an ambitious attempt to throw off both wings and jump out of its fabric as it headed directly towards the moon. Meanwhile, a swinging bullet-stream from a Fokker disturbed the atmosphere about six inches below its tail.

The Stumbler kicked over when he felt his machine shuddering at the point of a stall. Below him, the turning Fokker was only the vaguest difference of shadow against the black earth. But he thought he had it.

He came down with engine on just as a star-shell burst five hundred yards away and lit everything up in an uncertain, flickering glare. The Fokker pilot, actually was facing it. He may have been dazzled for a second, but, whatever the reason, he did not make the easy sideslip which would have swung him clear of the Stumbler's spitting guns.

"Damn!" breathed the Stumbler, thoroughly shaken. He saw his own tracers hailing out in a thin, uncertain line, saw them spatter through one red wing-bay when they should have gone straight through the pilot's cockpit. He kicked on left rudder and deflected to true-up his aim.

But the Fokker shot round in a steeply-banked turn and the Stumbler had to let it go for fear of getting over the vertical. As it was, he was so close to the ground as he flattened-out that he could almost

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hear the thunderous echo of his own engine.

Another star-shell and yet another rose up. Machine-guns began to splutter from all over the place. Something hit the Stumbler's engine-cowling with a vicious clatter as he hauled up into a climb, and he had the vague impression that wasps were about.

It was all very unhealthy and untidy. A revolving mix-up of machines appeared dead ahead, and sharp, red spurts of gunfire showed like stars all around. The Stumbler marked a Fokker for a second by the red glint on its wings in the uncanny light, got his Aldis sight dead on its tail and pumped heartily.

He missed again.

This was crazy !

He chased the Fokker, wondering whether the whole thing was a bad dream or not, and was convinced of its reality by a sudden thunderclap from overhead and a whistling line of German tracers which cooled the back of his neck as a diving Hun shot past.

Up to this moment Lieutenant Stephen Stumperton had privately been of the opinion that, given elbow-room, he could put a burst of ten bullets from a Vickers gun clean through the same hole the first one made, from a distance of fifty yards. He was not in the habit of talking about it, but his idea of himself as a passably good marksman was as firmly rooted as his belief that the strawberry jam was always pinched by the Army Service Corps.

Yet now he had missed. Missed "sitters." Twice.

He only missed eternity by a fraction of an inch in the next second when his commanding-officer, hotly pursued by a Fokker which had luckily got him into a diving turn, almost met him head-on. The Stumbler swerved like a pup from an angry cat, and he could have sworn their wing-tips clicked. Then, for the third time, he saw a Fokker, and such was his state of mind that he purposely risked collision by rearing upwards and thumbing both gun-controls in his spade-grip as he yanked it back into his chest.

There was a roar—a passing stink of

exhaust fumes—and the Stumbler had a momentary vision of a tattered Fokker fuselage diving past with its tail-plane crumpled and flaming.

CHAPTER III

The Order of the Court

THEN, quite normally and naturally, the fight was over. Normally and naturally, because outbursts of international feeling between single-seater squadrons, at night, were rare. Except in special circumstances, it was just as difficult for two parties to contact each other as it was easy for them to lose touch.

The Stumbler levelled-off and looked round him. Hardly knowing he had done so, he had gained some fifteen hundred feet of height. Below, a few star-shells burst here and there, looking as depressing as naphtha-flares on an empty fairground. Machine-gun posts squabbled with each other across the lines like squibs. And at three points in the rear, guttering bonfires showed where machines had made their last landings.

The Stumbler realised that machines were flying almost level with him, and grabbed for his gun-controls. But then he saw they were Camels, and rather fancied the nearest was that always flown by Captain Hardy. Anyway, they were making for home. Where the Fokkers had gone he hadn't the faintest idea. He thought of those bonfires, and immediately, by long practice, just didn't think about them at all until he finally landed on the home aerodrome and heaved up in his seat to count the rest of the returning flight.

Four came in. Captain Hardy, Willie Wilson, Jack Harris and—and—yes it was Tom Royal. Howell was missing.

Well, they were lucky to get away with only one knock-out after a scramble like that. Poor old Dick Howell. A decent chap, even if he was a bit too free with jam in other people's hair. Still, he might turn up yet.

The Stumbler heaved down out of his machine and thought about those three bonfires. Three Fokkers downed. Pretty

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good! He wouldn't admit, even to himself, that one bonfire might be all that remained of Howell . . . but he knew it, inwardly, all the same.

Now the others were ambling off towards the mess, where figures stood in an open doorway, illegally shedding a wedge of light.

"I saw him go," came Captain Hardy's voice. "Got it clean through the back. Anyway, I'm pretty sure he was dead before he fired-up. . . ."

There was an unusual bitterness in Hardy's voice. But, curiously enough, the Stumbler automatically ceased to think of it, there and then.

The Squadron had done well—two down for one. Pity it had been Dick Howell, but it had to be someone. Might be your own turn next. Meanwhile, if you were going to fly and take an interest in art and mathematics—in fact, if you were going to remain sane at all—you just couldn't think about chaps getting knocked off.

Walking quietly, the Stumbler turned aside from the others and was running almost on tiptoe by the time he reached the squadron office. Inside the main room a sleepy clerk half rose, but the Stumbler motioned him to sit down, and went straight into the smaller room.

Everything was untouched. The big records-book was lying on the desk, open. The Stumbler shifted it, and sighed with relief as he drew his beloved periodical from beneath its shelter. Then, with perfectly steady hands he lit a cigarette and once again dropped down into Hardy's chair. He turned the leaves through, then turned them back again and carefully detached a single page.

To any healthy-minded young man with artistic leanings, especially a young man spending his most impressionable years amidst the ugly strain and horror of civilised war, the page was a thing of beauty indeed. It was a picture of a very pretty girl chasing an orange monkey which was scrambling up a curtain. In its mouth the monkey held a thin silk stocking. The young lady wore the other one. She also wore an expression of laughing remonstrance.

The Stumbler thoughtfully laid the picture flat down on the open records-ledger with its interleaving of carbon-papers. He looked in the pen-tray and found what he sought. It was a broken bit of Gillette razor-blade. It had always been there, ever since he had first reported to the aerodrome.

"Methodical old beast—Kissme," he murmured. Then he laid his cigarette aside and started on a careful piece of cutting-out.

TEN minutes later, the Stumbler quietly entered the hangar into which his machine had been hauled. A man was working on it with a pail of dope and a stretch of fabric, patching the bullet-holes in one wing-tip. Farther away through the dimness, a corporal-rigger was just departing after the regulation check-over.

The Stumbler borrowed the dope-brush, ducked beneath the propeller, and worked carefully for a few moments, pasting that cut-out picture on the black side of his engine cowling. The mechanic watched him with an appreciative grin—but gasped slightly as Stumbler stood back to view the results of his handiwork.

"Sorry!" said the Stumbler, heedlessly. "There, that looks quite good. Marvellous bit of drawing, what? Golly, that's one thing you can say about the French, they can *draw*."

Absent-mindedly he handed the brush, wet end first, to the hopping mechanic, and still looking over his shoulder, took his departure.

At the door he picked himself up, flapped sticky hands, and swore.

"What the devil did you want to leave that pail there for?" he enquired peevishly. "Might have broken my neck!"

"Sorry, sir," said the mechanic, and still limping, he picked up the pail and went in search of a swab.

Lieutenant Stumperton went angrily back to his hut to change and wash. Actually, however, his mind, surfeited of art, was now occupied with reality. He had put up a bad show this evening, missing sitters like that. Of course, in

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the dark and at high speed, gunnery was tricky ; still, his eye had certainly been out. He needed a spot of careful practice.

Back in the anteroom after dinner, the Stumbler found things rather boring. Throughout dinner "Kissme" Hardy had talked, and talked angrily, about a lot of mysterious night-bombers that kept getting through. Apparently Headquarters were raising a strafe about it. Well, Headquarters were always raising a strafe about something, and the Stumbler, not being particularly interested, groped in his pocket, found his Newton textbook, and peevishly wiped a large smear of plum-and-apple off the gravitational theory.

"Golly !" he muttered to himself suddenly, far, far away from the heated argument which was now raging amongst the battered armchairs. "Golly that *would* be an idea ! First-class practice. Better than the butts. I could take a petrol can and drop it. Lets see now, it ought to be easy to work out the terminal velocity of fall, for a given weight. . . ."

He found a stub of pencil and busied himself with figures.

From another world, and entirely unheard by the Stumbler, came Captain Hardy's voice, cresting the general argument like a ship in a rough sea.

"No one's produced a penn'orth of sense about it yet," he said. "On each occasion those bombers have first been heard and reported to us by our Intelligence people on the other side, somewhere near Messines. But they haven't been heard crossing the lines. They haven't even been heard at the places where the bombing took place. No one saw them get there, and no one has seen them go home !"

"Carrying silencers !" suggested Willie Wilson.

"A possibility," said Hardy. "But not very likely. You know its the prop. that kicks up almost as much noise as the engine itself. And, in any case, silencers would bring the efficiency down so low that heavy machines'd be too sluggish to risk a long flight from their base, far behind the German lines, over here and back again. Now listen, I've

got it straight from Intelligence that the real base of those machines would be known in the ordinary way. Their tracks could be plotted, and the home aerodrome found. But until they get near Messines it seems that they travel like ghosts. That's the only spot where they've been heard at all."

There was silence in the anteroom. Everyone was pondering the problem.

"Filled with water . . . a petrol can would drop at—let's see, what's the square root of . . ." came Lieutenant Stumperton's absorbed muttering.

Willie Wilson grinned in his direction and then turned to the rest of the company.

"Seen the decoration on the Stumbler's machine?" he asked cheerfully. "I passed it in the hangar when I went to talk to the engine-sergeant just before dinner. Quite frivolous, Stumbler's getting in his old age. By the way, gentlemen, forgive me for changing the subject, but we don't seem to be getting much further with it, and I seem to remember that there was a certain confusion about sorting out our gear when we took off for the patrol this evening. Far be it from me to leap to conclusions, but the coat-rack was broken down, and the Stumbler was suspiciously near it."

There was some laughter, and some swearing.

"No man should be judged untried," grinned Willie Wilson. "But, I think, in this case, a properly constituted court-martial . . ."

A SUBALTERNS' court-martial is a time-honoured institution of the British Army. Its rules are rigid ; its dignity immense.

The Stumbler was slightly dazed when six young gentlemen fell upon him and, by order of Captain Hardy—instantly elected President of the Court—brought him into the dock, formed by an up-ended table.

Tom Royal was Prosecutor. In a long and damning speech he charged the accused with every crime in the calendar except that of upsetting a coat-hook rail, and including high courage in the face of the enemy, biting a German general,

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robbery on the high seas, and eating peas with a knife.

The Prisoner's Friend, Willie Wilson, replied with considerable forensic skill. From evidence he said was only just to hand, he convinced the Court that Lieutenant Stumperton was in reality a Greek sardine magnate posing as a German spy to avoid military service. He successfully avoided mentioning any of the charges which had been brought, but proved conclusively that the prisoner was innocent of the murder of the little princes in the Tower. His client, he pleaded, had had only one conviction before, that of cheating in an egg-and-spoon race in the Botanical Gardens at Wigan in 1862. Let them remember, he said, that boys will be boys. He sat down, weeping.

Much moved, the President of the Court said it was a very bad case. In the interests of the British Empire at war, he said, he could impose a sentence no less than that the prisoner should immediately prepare himself for athletic exercise, and run twice the length of the room.

The prisoner's guards prepared him for athletic exercise. When they had finished, the gasping Stumbler was as economically attired as the young lady who decorated his machine. He was left his boots.

Privately, although he had grinningly entered into the spirit of the thing, he was wondering why he had been let off with such a light sentence. Subs.' court-martials usually ended with highly alarming results for the victims thereof.

He was set on his feet. His guards stood away from him, and the President of the Court stood up with a raised handkerchief.

"Once there and back!" he said sternly. "When I drop this handkerchief—run. *Now!*"

The Stumbler started off like a track champion. In such circumstances, if one was sentenced to run, it was well to run hard and cause no unnecessary displeasure.

That someone had tied his bootlaces together he did not fully discover until he was tottering in mid-air.

CHAPTER IV

Stumbler Registers a Hit

BEFORE patrol time on the following morning, Lieutenant Stumperton was on the wing. His nose was rather red and he had an aching jaw. One shoulder felt as though it had been dislocated; which, as a matter of fact, was not far from the truth. For the Stumbler had proved once again that Newton was right. Everything which went up had to come down.

When he had come down on the ante-room floor after the subs.' court-martial on the previous night, the Stumbler had verily shaken the foundations. Indeed, he had still been in a dazed state when a couple of grinning mess-orderlies untied his bootlaces, swathed him decently in tablecloths and assisted him to his sleeping hut.

After some considerable searching, his batman managed to find his clothes, which the light-hearted members of the court-martial had left decorating every airy perch about the aerodrome, from the top of one of the hangars to the summit of the drogue-post, where his breeches had taken the place of the canvas tube and were rove tight in the halyards. By the time the perspiring batman returned, however, the Stumbler had anointed himself with embrocation, climbed into his pyjamas, and was actually once again at work with his pencil and notebook.

"Good man, Boker!" said the Stumbler cheerfully. "All right, shove 'em down there. But look here, Boker, what time does it get light?"

"'Alf past five, sir," said the breathless air mechanic Boker. "But surely you don't want—"

"Fine, Boker, fine!" said the Stumbler, laying aside his pad and pencil. "I could have got it done sooner if those chuckle-headed asses hadn't interrupted me with all that foolery. Jolly nearly broke my shoulder, too. But I've got it all worked out now, Boker. It stands to reason that any falling body must have a terminal velocity. I've got all the details about it somewhere at home,

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among my physics notes. But it's easy to work out, anyhow. You just have to allow for the friction of the air and that kind of thing, against the gravitational pull."

"Y—yes, sir," gasped Boker, "yes, sir. Not 'alf you don't, sir. Is there anything more, sir?"

"Quite interesting, isn't it?" smiled the Stumbler. "Well, now, a petrol can filled with water would fall at just about——"

He caught the expression upon his faithful servant's face and sighed.

"You know, Boker, I don't believe you understand the first thing about physics," he chided.

"Oh, if it's fissic you're wanting, sir?" said Boker helpfully. "There's some medicine——"

"Hop it!" said Lieutenant Stumperton, a little pettishly. "Go on, buzz off. Great Snakes, this is the most scientific arm of all the British forces in the field, and yet nobody around here has got as much interest in real science as a——as a——"

He groped aside to stub his candle out.

"Wake me at five," he ordered. "Five sharp, mind you. And fill an ordinary petrol can with water, screw the cap on tight, and put it in my machine, behind the seat. Got that?"

"Yes, sir," said Boker, backing towards the door thankfully.

"Then good night to you," said the Stumbler.

AT half past five the following morning Lieutenant Stumperton levelled his machine out at about eight thousand feet immediately above the aerodrome, groped behind his seat, and thought a lot better of Air-mechanic Boker when he found a filled petrol can lying there, according to orders.

The Stumbler put his machine into a steep left-hand turn. As he did so he leant out holding the heavy petrol can in one hand. A glint of early sunlight showed the picture of an economically dressed young lady decorating the side

of his engine cowling. He regarded it with pleasure—and then let the petrol can go.

Naturally enough it dropped like a stone. There was a light wreathing of mist far down below, a mist which entirely obscured the aerodrome buildings and also tricked the Stumbler into thinking that he was really a mile or so west of his own headquarters, where there was nothing but uninhabited, shell-torn ground.

The Stumbler put his machine down into an engine-on dive and went after that falling petrol can like a pouncing eagle. He kept his eyes on it, saw it disappear into a wreath of mist, lost it in the vapour, saw it again, and levelled his sights on it as he came within range.

Then he thumbed both machine-gun controls healthily.

The can still fell with a level motion. It did not jerk. No spouts of water came from suddenly-made holes in its sides.

"Damn!" breathed the Stumbler through his teeth. By all the rules of the game, and his own powers of shooting, that petrol can should have been as well peppered as a sieve by now. But it wasn't.

The Stumbler cursed. Plunging down the sky like this after a tiny object was difficult enough. True, it was a first-class method of practising shooting. But the shooting itself—was awful!

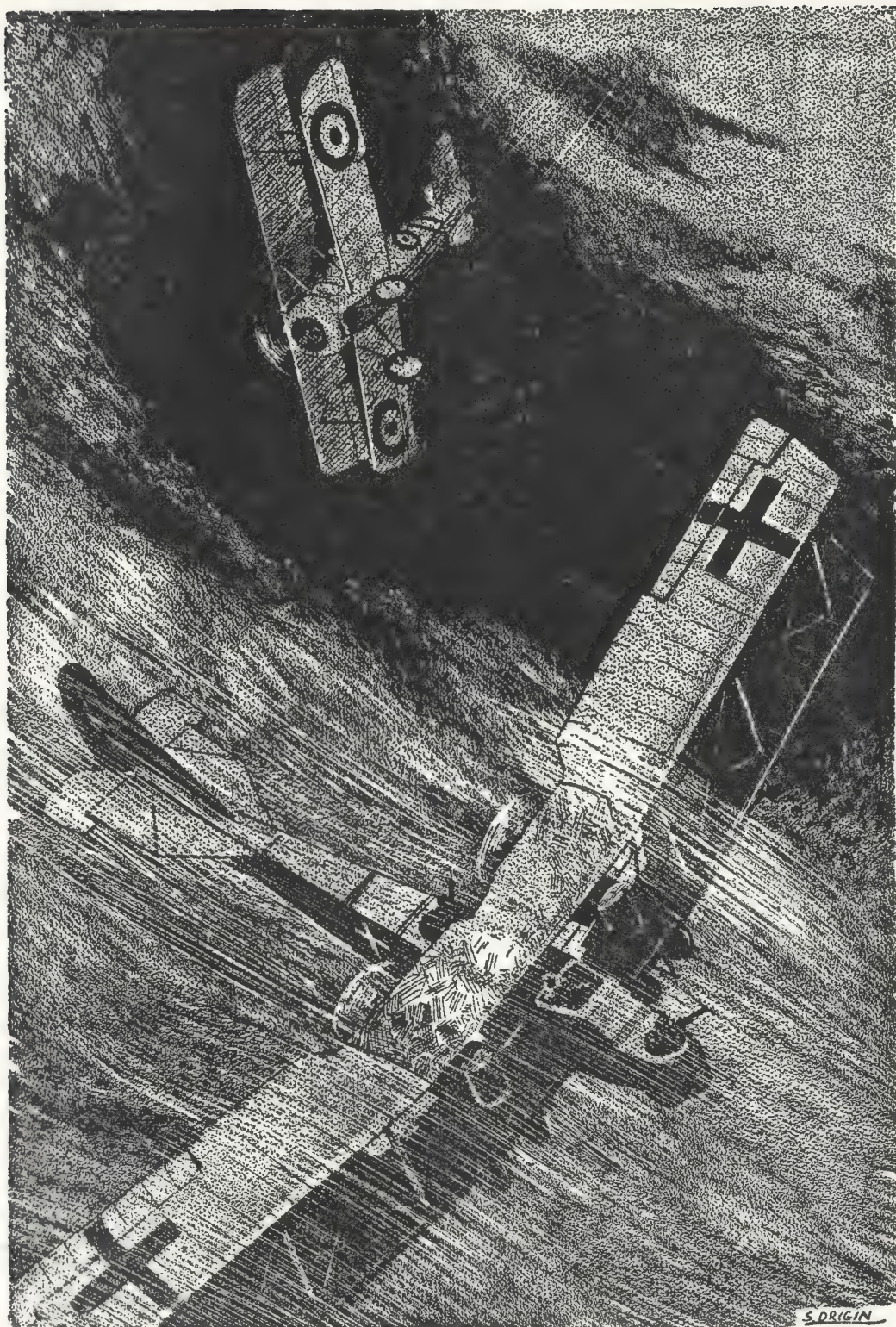
The Stumbler roared aside, made a diving turn back again, sighted the can carefully and let fly. He had lost his temper now. He was going to hit that can if he had to dive clean through it.

Instead, he very nearly hit the squadron-office roof.

With a sudden appalled gasp he saw the vague grey shape of the building shooting up at him through the low ground mist. Frantically he kicked his rudder straight, eased his stick back, and came up out of that dive with wings shuddering. Like an explosion, he shot away across country, to turn sharply and make for a landing on the aerodrome itself.

Meanwhile, Captain Hardy and a certain highly-placed official from Headquarters were collecting themselves

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High in the mist he half-rolled and came down on the Friedrichshafen in a screaming dive

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dazedly, and knuckling water, dust and blank amazement out of their eyes.

Above them, the squadron-office roof showed a large torn opening. In the middle of the floor was a shattered table streaming with water—and the remains of what looked like a petrol can which had exploded.

The Headquarters official was lying on his back with a chair underneath him and his feet in the air. Captain Hardy was sitting with legs outstretched and papers in a sodden confusion littered all around him.

"By golly, we were lucky!" panted the senior officer, heaving himself up. "That Hun must have scored a direct hit! By golly, it came down dead between us. Must have been a dud! Thank Heaven it didn't explode."

"Yes, sir," panted Captain Hardy. "Yes. Yes, indeed—Oh—oh yes——"

He stared at the shattered petrol can. He heard a machine, which a moment before had passed straight overhead, swing round and come humming in on to the aerodrome. His brain worked like lightning and his face became homicidal. But, tactfully, he took his senior's arm and led him out to where startled mechanics were gathering.

"Better—better come along to the mess-room, sir," he panted. "I'll have someone give you a brush down, sir. We can continue our talk there. But, meanwhile, if you'll just excuse me a minute——"

"Get Headquarters on the 'phone at once," panted the other. "They must contact the nearest H.E. battery and put over a counter-attack. By Jove, the Hun has certainly got his shooting-eye in this morning——"

Still considerably shaken, he tottered away towards the mess.

CAPTAIN HARDY made straight for the newly arrived Stumbler, who had climbed out of his machine and was talking earnestly to a sergeant-rigger.

"I'm going cuckoo!" panted the Stumbler. "Sergeant, I can't shoot! I'm missing all over the place. Don't know if it's my eyes——"

The sergeant, a man of long and bitter experience, looked over the machine with a practised eye. Suddenly he reached up and touched the front part of the Aldis sight. It very nearly came off in his hand. Closer examination showed that its base had been wrecked by a German bullet on the night before.

"You needn't worry no more about your eyes, sir," said the sergeant cheerfully. "I'll have that corporal-rigger's stripes off——"

But the Stumbler was not listening, for by that time Captain Hardy had arrived.

"Just a minute, Stumbler," said Captain Hardy, breathing heavily. His face was wet, and there was still dust on his hair. "Just a minute. Did you by any chance drop anything? Did you——?"

"Oh, hullo, Kissme," said the Stumbler. "My dear fellow, I shall have to apply for leave to go and see an oculist, or something. Most extraordinary! Missed twice last night and then again this morning—look here, there's no doubt about it. I checked on it, rather a bright idea as a matter of fact. I took up a jolly old petrol can full of water, heaved it overboard and dived after it, shooting."

"You dropped a petrol can?" said Captain Hardy in tense, trembling tones. "Listen, you—you—now *wait* and listen to me——"

"You mean it dropped somewhere on the aerodrome?" asked the Stumbler, aghast. "Oh, by Jove, I'm frightfully sorry. But there was a spot of mist about. I told you my eyes——"

But Captain Hardy was very badly shaken. For a space of ten minutes by the clock he addressed Lieutenant Stumperton in terms which even made the sergeant-rigger gasp, and which brought several other awed-looking members of the Squadron close to the spot. It was afterwards openly stated that Captain Hardy only drew breath three times and never once repeated himself. One of the onlookers swore that his watch stopped.

"And that's *that*!" stuttered Captain Hardy, drawing a mighty breath at the end of his recital. "I'm a fool not to

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have you court-martialled. I'm guilty of criminal neglect of duty in not having you shut up in a padded cell, right away. I haven't time to say more, now."

The Stumbler's tongue moved dryly within his mouth.

"But," said Captain Hardy, "understand this, Stumbler. From this moment onwards, if you try out any more of your bright ideas without my permission—if you do a single thing which is not in the way of carrying out ordinary aerodrome duties—I'll run you back to the Pilot's Pool as unfit for further service. I'll run you out of the Squadron! I'll—I'll——"

Captain Hardy's vocabulary at last broke down under the strain. He moved his mouth a few times. It gave forth a gobbling noise like a turkey. Then, scarlet of face, he turned and stamped off back in the direction of the mess.

When he got there he agreed with the very senior officer who was glad that the German long-distance gun showed no further super-excellence that morning.

Slowly the Stumbler made his dazed way towards his hut.

He looked like one who would never smile again.

CHAPTER V

The Man from Headquarters

AS is often the way in the curious melting-pot of war, the Stumbler's squadron contained men of diverse temperaments, and of unexpected talents. Lieutenant William Wilson had talent, as well as the Stumbler. Mostly, Lieutenant Wilson's talents were those of the born comedian, but like many comedians, he also had a gift for the simpler matters of mechanics.

Which was undoubtedly why, on the Stumbler's retirement to his hut, he occupied himself in half-filling an empty petrol can with lumps of carbide. This accomplished, he then robbed the Squadron's football of its bladder, which he squeezed through the top of the petrol can containing the carbide. With extreme care he then filled the bladder with water and tied its end securely with string.

To the grinning Tom Royal, who was watching this operation, Mr. Wilson made a whispered remark as he screwed the petrol can top on tightly.

"Nice little Brock's benefit!" he murmured. "You know what the Stumbler is. When we come in from patrol this afternoon, I'll bet you he'll push off clear of the aerodrome, chuck his petrol can out and have another stab at his shooting practice, in spite of what Kissme said."

"It's a safe bet," chuckled Tom Royal. "But I don't know much of these things. What's the big idea?"

"Tracers!" grinned Mr. Wilson. "Directly his tracer bullets go through this can they'll puncture the football bladder. That'll mean that the water'll fall out all over the carbide. Carbide's what you use in acetylene lamps. When you wet it, it gives off a gas. In fact, it makes gas at a tremendous speed so that inside a second the pressure inside this can'll be terrific."

"You mean it'll blow up?" asked Tom Royal hopefully.

"I mean that it'll blow up with a beautiful burst of flame," smiled Wilson, ecstatically. "The first tracer that hits it will set the whole lot alight. There'll be one big wallowing bang, and dear old Stumbler will jump clean out of his seat with fright. We'll hang about close to him and watch the fun."

Lieutenant Royal flung back his head and roared with laughter. The vision of the Stumbler's utter amazement at a petrol can filled with "water" behaving in this unusual manner was rich indeed.

"There we are now," chuckled Willie Wilson, giving the screw-top a final twist. "I'll slip this to his mechanic just before the patrol starts, and tell him to put it behind the Stumbler's seat. I'll tell him to warn the Stumbler it's there, just before he takes off. The dear boy will probably think that Kissme has given permission for it. In any case the temptation to try his precious stunt again will be much too strong for him to resist."

The two conspirators then cheerfully lit cigarettes and emerged into the world of ordinary men.

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IN the Squadron's mess-room Captain Hardy and the officer from Headquarters had steadied themselves down with the aid of certain strong waters, and were deeply involved with a knotty and difficult problem.

"Well," said the man from Headquarters, "you know as much as we do now, Hardy. But counter-espionage on this side is just as good as our own over there. That's why the Chief decided to send you verbal orders instead of by the ordinary way over the telephone. From now on your squadron is on special duty to intercept these bombers—to get to the bottom of the mystery. You will drop all ordinary routine. You will undertake none of the ordinary offensive patrols."

"Thanks," said Hardy with a sigh, "but, if you'll forgive me, sir, it's all very well to say I know as much as you do—but what *do* I know?"

He rose to his feet, lighting a cigarette. Then he bent over a large map which had been spread out on the table between them.

"I know that those bombers have got through now for seven nights in succession," he said grimly. "I know that you tell me they take this direct line from where we are now, to Lille. I also know that I've been over on the other side of the line in the German back areas, when the beggars must have been coming home. And I'm willing to bet anything you like that if they *did* go home that way I couldn't have missed them."

"It's a queer business," agreed the other. "And all I can tell you is that we *do* know those machines took that exact route home. Last night we were lucky. A patrol from 25 Squadron actually contacted them almost immediately after they had dropped their load. The beggars went straight on, dead in the direction of Messines—but our men lost touch."

He sighed.

"It's difficult to make head or tail of these reports," he finished. "I don't like to think that 25 were making weak excuses for themselves. But they said that those bombers either had a colossal turn of speed, far greater than any we

have ever known before, and so climbed clean out of range, or else they shut their engines off and went down to land. In the confidential report at Headquarters we were told that the exhaust flames from the bombers' engines—the only thing easy to follow in the darkness—suddenly disappeared altogether. At a signal from their leader, our squadron cut off their engines and glided for quite a while. But they could hear nothing."

"Well, a flock of Hun egg-crates couldn't possibly disappear like a whiff of smoke," said Hardy testily. "And the story of their colossal climbing powers is all 'my eye.' It *must* be, though I've got as wholesome a respect for the engineering Hun as anyone else. But no heavy bombing machine could climb clear away from a scout patrol and leave it standing."

He shook his head and fell to pacing the room.

"It's this business of silence that worries me," he snapped. "It's so—so idiotic. It's like some lurid mystery-melodrama—not real at all. They *couldn't* have shut off their engines. I was coming along pretty low over Messines just about that time. If they'd shut off they'd have been bound to come near the ground somewhere close to me, and I'd have seen them. I was leading my boys along some ten feet from the ground. In fact, the beggars would have had to *land!*"

He paused and thudded one fist into the other.

"And I can tell you," he finished, "that there isn't a flat stretch of ground which isn't torn to pieces by shell-holes for ten miles in any direction from that spot. There isn't a single place near there where any bomber could make a landing without coming to grief."

"Well—well, there it is, Hardy," said the other. "I'd find the whole thing difficult to believe if I hadn't nearly been blasted out of existence by a bomb the night before last. We've simply got to solve the mystery—you've got to solve it. After all, we're giving you a free hand, you know."

"Nice of you," answered Captain

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Hardy, who in his agitation was beginning to forget the respect due to superior rank. "You might chuck in a pair of seven-league boots and an invisible cloak, and a magic carpet as well. *I've* got to solve the mystery! Why, I've been cruising about the sky night after night, getting frostbite at all altitudes, going along the lines you people laid down. If you can *prove* any bomber passed me, I'll—damn it, I'll resign! I'll send in my papers. I'll join the A.S.C. and die of a surfeit of strawberry jam!"

His senior rose and picked up his hat.

"Well, Hardy, there it is," he said in a slightly different tone, which held a faint reminder of authority. "I'm sorry I can't help you further. You will—er—carry on."

"Yes, sir," said Captain Hardy.

He tossed his cigarette away and became frigidly polite. He felt like asking whether, in the unlikely event of his finding the bombers, he should wrap them up and send them to Headquarters, or wait until they were collected. But he held his peace.

"Good night, Hardy," said the senior with a nod.

"Good night, sir," said Captain Hardy.

But as the door closed he slumped down in his chair and ran a hand across his eyes.

To the ceiling he remarked:

"Good grief!"

CHAPTER VI

The Phantom Bombers

TO the members of the delayed afternoon—now the evening—patrol who were assembled outside the hangars a few hours later, Captain Hardy spoke quietly and in a tone which was far from his usual cheerfulness.

"I wasn't told to keep it all to myself," he said finally, "and, anyway, I can't see any sense in secrecy, as things are. Now all of you know as much as Headquarters does—as much as I do. I've been given a free hand, so we'll go to work and try an idea I've thought up,

although I'll admit I don't consider it exactly brilliant."

He nodded to Willie Wilson.

"You'll take charge of this patrol," he said. "You'll get up as high as you can, and when you reach the ceiling you'll stay there as long as your juice lasts. Royal, you operate about four thousand feet lower than Wilson. Harris, your place is about four thousand feet lower than that."

He glanced towards the Stumbler.

"Your place will be at a height of about three or four thousand feet from the ground," he said shortly. "Because you haven't got to climb, you'll have the longest outward range of any. Go as far as you can before turning back and go down low from time to time."

He planted his hands on his hips.

"That makes a reasonable kind of ladder, and if any Hun bombers manage to slip through the rungs anywhere, one or other of you will be bound to see them," he finished. "Keep your eyes open. I shall be following behind. I'll take a middle course at round about eight thousand. In fact, I shall dodge up and down. All right now, get going."

The pilots turned away to their machines, but as they did so, Willie Wilson winked at Tom Royal.

"It's all set," he breathed. "I saw the Stumbler's mechanic just now and handed him that petrol can. The moon will be up in a little while and I'll bet you old Stumbler won't be able to resist taking a few pot shots, somewhere around here, when he gets back. We'll have to land before he does, of course—but if we don't see fireworks happening somewhere——"

Smothered laughter rose from between the two. Through the rapidly deepening twilight they went to their waiting machines, and in a minute or so were roaring away off the ground.

But Lieutenant Stephen Stumperton was less fortunate. When he reached his machine he found a square board hanging on its propeller boss—a board carrying the word "TEST" in red paint. Like many aerodromes run by a commander with a passion for orderli-

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ness, this one was subject to certain very sensible rules, not the least important of which was a rule forbidding any machine to be taken straight off, on an action patrol, after any kind of repair, unless it had first been subjected to a test flight.

"You needn't worry about your eyes, sir," grinned the sergeant-rigger, coming up as the Stumbler paused. "That sight pin was near knocked off—and I very near knocked off the corporal's block for not having seen it when he made his test yesterday."

"Oh, good," breathed the Stumbler. "Good, that's fine. That relieves me a lot. But—but I'm supposed to be taking off on patrol, straight away. I can't hang about and do a test flight now——"

From behind him Captain Hardy came up out of the gloom. He was still angry with the Stumbler. Moreover, the sergeant had overheard that earlier dressing-down, and Hardy was in no mood to relent yet, especially in front of an N.C.O.

"Take my machine," he snapped. "And please hurry, Mr. Stumperton. I'll give yours a short test, and come on behind the rest of the flight."

"All right," breathed the Stumbler. "Oh yes, of course—but, I say, you know I'm *frightfully* sorry about——"

"*Please hurry*," said Captain Hardy in a voice that was all broken glass, vitrol and liquid dynamite.

The Stumbler hurried. The Stumbler was badly depressed. He was genuinely fond of Hardy, who had the gift of friendship and charm, as well as being a born leader. In the Stumbler's opinion that business of the petrol can was just rotten bad luck. Dash it all, he wouldn't have *meant* to do a thing like that, and Hardy needn't have got so wild about it. Come to think of it, he'd never had such a choking-off since the days when he was a raw cadet and could be bullied by sergeants.

In a mood of melancholy the Stumbler scrambled up into Hardy's own sacred machine and buckled his belt while a mechanic waited at the propeller. His one consolation was that that fear about

his shooting had been proved nothing but a nightmare, after all. Under Hardy's ruthless discipline the aerodrome organisation was so good that the Stumbler hadn't even considered that the fault might be with his machine. He even had a faint sense of sympathy with the corporal-rigger as his propeller swung and his engine clattered into ear-splitting life.

The Stumbler took off into the void of gathering darkness, took the direct line for distant Lille and dutifully climbed to just about four thousand feet.

A FEW minutes later Captain Hardy was also in the air following the rest of his flock at a distance of about five miles in the rear.

Without having the slightest idea of any such thing, he was carrying with him a petrol tin ingeniously designed, in certain given circumstances, to transform itself into a gasometer. This highly dangerous object was reposing snugly behind the aluminium bucket of his seat, but, as some anonymous philosopher once laid down, "What the eye can't see, the heart doesn't grieve for."

In blissful ignorance, Captain Hardy flew upon his way. In equal ignorance of the plot that had gone wrong, the Stumbler bored the blackness ahead on the trail of Tom Royal and Willie Wilson, those jesters who had builded very differently to what they had intended.

The whole squadron, in its curious formation, with its leader bringing up the rear, thundered away over the lines, over the back area, past Messines and towards Lille.

Five minutes later, certain star-shells arching up into the air at certain occulting intervals from the German side caused members of the Intelligence on the English side to swear in exasperation and puzzlement.

For those star-shells carried a message.

And the message was that the mysterious bombers were already in the air—and on their way!

Both Captain Hardy and the Stumbler saw the star-shells—but, not being

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members of the Intelligence Service, they had no idea that signals were being passed. The Stumbler, flying low down near the ground, was still depressed and worried. He was worried because the Fates had seen fit on this evening of all evenings, to send wreathing banks of mist which would neutralise any good work that the Squadron might have a chance of doing.

Three or four miles behind the formation, and flying at about four thousand feet, Captain Hardy, too, became aware of the mist-drifts, and swore in quite an artistic manner. For use in case of necessity, he had introduced an elaborate system of Very light signals with which to call the attention of his men, wherever they might be about the sky. But with this mist hanging about in layers it was more than probable that they wouldn't see any signals if he sent them up.

Hardy pulled his stick back, gave his engine everything it had, and climbed steeply. For a few moments he glimpsed tiny faint lights far ahead which he thought might be the exhaust flames of the Squadron's machines at different heights in the sky. Pleased that he had been able to see as much, he dived. He went right down until his altimeter was showing less than three hundred feet. In the ordinary way he would not have dreamt of doing such a thing. There was no sense in it. The Squadron, even those ahead, were not yet far enough behind the German lines to find a clear space where any kind of secret aerodrome could be hidden.

Yet Captain Hardy, at that moment, experienced a peculiar sensation.

For one short moment he was absolutely sure that a formation of large machines had suddenly passed him in the uncertain darkness!

THERE is a natural phenomenon about flying, especially flying at night, which will be easily understood. The noise of a pilot's own engine, so close to his ears, deafens him so that he cannot hear other engines, however close they may be.

Moreover, two machines passing each other at a combined speed of somewhere in the region of three hundred miles an hour, are only going to have the briefest sight of each other. Having established contact, they lose it in a split second. With darkness to swallow both of them up, such a contact has the effect of a mirage, a dream—or an hallucination of the senses.

Captain Hardy, almost leaping out of his seat, thought that he had experienced a mixture of all three.

Nevertheless, instinct, born of long practice, made him yank the stick back, kick his rudder over and go round in a screaming turn which took him in the opposite direction in a headlong climb.

"It's not possible!" he argued to himself. "I'm crazy! If those were the bombers they wouldn't dare fly so low, so close to the lines. With all that explosive on board it would be sheer suicide. Coming along from the back areas like that, they wouldn't have an exact enough knowledge of the land contours to avoid biffing into buildings or trees, or anything of that kind. They might get away with it once—but they wouldn't do it regularly. And yet I could swear——"

Naturally enough, Captain Hardy's direction of flight was now taking him away from his own followers at a dizzy speed of recession. The gap between them was widening with the seconds to three miles—four miles——

Hardy's Camel thundered through a ghostly bank of mist, shot out into clear darkness beyond, pointed its blunt nose Heavenwards.

Then Captain Hardy saw stars!

He suddenly saw a scatter of stars wavering uncertainly in the void ahead of him. He choked, blinked his eyes and tried to make sure that he was not dreaming.

For those stars could only be exhaust flames. To-night, by secret orders, his own squadron was the only British unit operating in that sector. Any other machines, therefore, must be German.

And, by a logical process of thought, they must be—the mysterious bombers!

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WITH an almost-childlike surprise Captain Hardy found that from the moment of sighting the exhaust flames to actually coming level with the mysterious machines, the time was unexpectedly short. Had he but known it, his fast single-seater scout was catching them up at the rate of a good fifty miles an hour.

Below him in the darkness slid three, big shapes, vague, uncertain, but amazingly clear in detail to his mind's eye.

Hardy gripped his gun controls—and pressed.

And his dream came true !

A stream of tracer bullets whipped from his guns, and tore and smashed along a dull, black-painted fuselage, then swerved aside as he kicked over into a turn.

In that moment three German gunners and a relief-pilot died. But, owing to blind shooting, Hardy had missed the vulnerable point—the petrol tank. Next instant he found himself the centre-point of concentrated fire from the well-trained gunners of the other two German machines.

Hardy climbed like a startled cat. He grabbed inside his office for his Very pistols, and cursed as he plunged into mist and knew that the chances of his men seeing signals from such a distance, and coming to the attack, were nil.

His feet jumped on the rudder-bar as a couple of bullets ripped a boot-sole away. His right wing bay shuddered, and fabric ripped and tore away in flying strips. There was a nasty clang from the direction of his propeller, and the engine set up a sickening, uneven rhythm.

But Captain Hardy, with teeth set, was bent on finishing a good job once he had started it. High in the mist he half-rolled and came down in a screaming dive, knowing full well that he chanced an appalling head-on collision. For one brief instant he saw the vague outline of a bomber just away to his left. He saw it turning—saw that the others were turning, too.

In that instant he understood why. The machines had been playing a clever game. Now that they had been spotted

they were turning for home as fast as they could go, before this English pilot could call up help. By fighting they had everything to lose and nothing to gain.

"Well, here's something to remember me by, Fritz !" breathed Hardy, and fired again.

But bombers are spiny things to attack. Even as his own bullet-trail flicked out, Hardy was knocked half-senseless and his goggles were sent flying. The bullet which had grazed his head felt like a violent blow. His instrument-board collapsed in flying glass. From behind him there came a peculiar sound—a drumming sound.

A moment later a violent explosion took place immediately behind Captain Hardy, and the entire rear part of his machine burst into spreading, blossoming flames !

AS has been said before, carbide of calcium—acetylene—gives off gas at terrific pressure when drenched in water. Should something inflammable meet it whilst that pressure of gas is being created—well, then the fun starts ! The fun in this case was Lieutenant Stumpton's shooting-practice petrol can, thoughtfully refilled by his humorous comrades and placed by an unsuspecting mechanic behind his seat. Only, by a freakish chain of circumstances, it was Captain Hardy who inhabited the seat at the critical moment !

Without the faintest idea of what had caused this amazing phenomenon, Hardy plunged down through the death of several thousand hailing bullets, too stunned and preoccupied to realise their added danger. He half-turned round—and realised that his position was completely hopeless. By some extraordinary mischance his machine was on fire from the back of the cockpit to the tail. It was rapidly disintegrating into blazing struts and melting metalwork.

Captain Hardy did not like fire. There was not a single pilot in the entire Flying Corps during the War who did not regard fire in the air as just about the most

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unpleasant and ghastly thing the mind of man could contemplate. In the War, the parachute had not yet come into its own; in fact, it had not come into the orbit of scout-pilots at all. It was regarded as the somewhat humorous and extremely dangerous plaything of that section, impolitely called the "balloonatics," or the Kite Balloon Observation Corps.

Captain Hardy, with his back hair gone, his neck scorched and his heart a mixture of ice and water, flicked undone his safety-belt and reared up spasmodically.

If he spoke, if he shouted or yelled, he knew nothing about it. One thing alone dominated his mind, as in tragic circumstances it had dominated the minds of many brave men before him.

One thing was certain. In the next few seconds he was going to meet his death in one of two ways. Death by roasting, if he stayed—or possible bad injury in the resulting crash, and torture by fire until his senses left him.

As an alternative, there was only the appalling, but clean and sudden, method of falling straight on to the earth away from the flames.

Captain Hardy jumped.

CHAPTER VII

Newton Was Right

SOMEWHERE about five minutes before Captain Hardy's Camel caught alight, Lieutenant Stephen Stumperton swung his machine round from where it was flying at less than fifty feet above the shell-torn ground. He was, he knew, a few miles on the German side of Messines, although as to the actual point in topography, he was necessarily vague.

But through the wreathing, sickening mist he had seen something peculiar. He had seen what looked like three trenches, all dead straight, in that shell-torn area. He was prepared to swear they had not been there yesterday. His keen, practical mind immediately made him wonder what on earth the Hun could have built them for. Their presence here did not make sense. This

district was only just within range of heavy shell-fire. Trenches in such a place would be idiotic.

He roared back in the mist, found that it had closed in behind him and that he could not see a thing. He turned and flew higher, knowing the danger of keeping at a low altitude in such blind circumstances, and as was his way, he turned the problem over carefully in his mind. He tried to reason it out,—in so doing he covered three or four miles in the reverse direction. Then he came to a sudden decision.

Dear old "Kissme" was oiling along somewhere behind the Squadron, just hereabouts. The Stumbler was anxious to regain his position in Kissme's regard. He was anxious to prove himself a keen and intelligent officer.

"I'll hop up, let loose a Very, and see if I can call his attention," mused the Stumbler. "The mist may break—we might go down and get another clear look at those comic trenches."

He climbed steeply, glanced at his altimeter, and saw in some surprise that he was already higher than he had thought, a common enough happening when flying in mist. At four thousand feet he groped for his Very pistol, anxiously searching the blank wall of fog.

And then he very nearly fell out of his machine.

A burst of machine-gun fire had suddenly broken out a little way above him and not more than eight hundred yards to his left. Momentarily, he saw the faint flicker of tracers and tiny dancing flames. Gasping, he swerved aside and roared towards the incredible disturbance. The bullets and gun-flames disappeared in the mist—then, suddenly, he saw them again.

It was a good thing that Lieutenant Stumperton was wearing his safety-belt, or he would certainly have jumped clean out of his machine when his dazed eyes suddenly beheld the lurid splash of fire which burst out just about fifty feet above him.

In its glare the Stumbler saw Captain Hardy. He saw Captain Hardy's machine

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—his own machine—dissolve in flames from the cockpit rearwards, while still diving with engine on. It was a blazing, glaring bonfire, rendered much brighter than usual by the burning of the acetylene gas. For a few seconds it was almost as bright as magnesium.

It lit up two black-painted bombers which were now turning and diving back towards Germany. It showed clearly a third, with fabric ripping away from its bullet-torn fuselage, and with only one man left alive on board, still handling the controls.

The Stumbler gave a yell of amazement, which quickly turned to a yell of horror. The blazing bonfire passed him. He saw Hardy rear up, steady himself for an instant, then spring out headlong, to fall whirling head-over-heels about ten feet away from his flaming machine.

"Oh, my God!" breathed the Stumbler. "*Kissme*—"

And instinctively he dived, too.

Actually, he was yelling frantically—unconsciously. He was seeing a man he liked better than anyone living dropping down to a certain, smashing death. Hardy fell faster than the burning machine, which still had its main planes. His body was falling spreadeagled, but steadier now in movement.

And suddenly a thought flashed into the Stumbler's chaotic mind. He found himself going headlong down the sky with his eyes fixed on one small object. By a natural reaction of subconsciousness, he felt as he had done earlier that same afternoon, when diving through the clouds after a falling petrol can.

"The speed of a falling body," breathed the Stumbler to himself. "He weighs about twelve stone. It would be—it would be—roughly, the terminal velocity'd be roughly about 130—"

The Stumbler steadied his dive, glued his eyes on that falling figure, but chanced a glance aside at his air speed indicator.

It was showing about one hundred and forty miles an hour. Immediately, he cut his engine. The speed of his dive became less. The altimeter dropped back. And that falling figure, now dimmed by

reason of its distance from the blazing falling-leaf of wreckage above, came closer.

The Stumbler dived on and got the spreadeagled figure in his gun-sights. Then, at the last critical moment he eased aside slightly and brought the crossed bracing-wires of his left wing bay dead across that falling figure, with a sickening thud!

ALTOGETHER, it was a nice display of piloting skill and mental arithmetic. The terminal velocity of fall of an average grown man is one hundred and twenty miles an hour. The Stumbler's bracing-wires came up against the falling Captain Hardy's back and side whilst the machine was diving at about one hundred and thirty. The resultant speed of impact was about ten miles an hour, and heavy enough, in all conscience. Hardy's body was bent sideways with a sudden wrench, and one of his outstretched arms, his shoulder and head came through the top of the bracing wires where they crossed.

"Hang on!" bellowed the Stumbler. "For the love of God, hang ON! Grab hold of those wires, *Kissme*. *Hang on!*"

For a moment his machine swerved drunkenly, and he slammed on hard right rudder, hard right bank, at the same time pulling the stick back with vicious force.

Back in the old days, before diving speeds went up beyond the hundreds, it was a fond fiction amongst scientists that any man who fell from a height would be dead before he reached the ground. The fiction actually persisted in the early days of flying until it was disproved on various occasions by men who had fallen from their machines and landed on haystacks or thatched roofs. Naturally enough, such men were usually badly injured—but they were alive. Some of them even recovered from their injuries.

None of them could ever give a clear impression of his thoughts during the ghastly time of his fall. Probably, when a man is launched towards what he

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regards as certain and unavoidable death, there is a certain merciful numbness of the brain.

In after days Captain Hardy was unable to add to the knowledge of scientific research, any more than anyone else. He could never remember that he actually felt those bracing-wires strike him. His memory only seemed to come back when he found himself in the unreal position of hanging frantically on to the wires, with a colossal pressure of wind bearing him against them—and with three stove- in ribs to keep his thoughts occupied. He hung on more by instinct than by anything else.

At the controls the Stumbler knew that he had taken a million-to-one chance. The mist parted, wreathed, and he saw the ground. Since he had first seen that burst of flame he had lost all sense of direction. Actually, he was now diving drunkenly back towards Germany, without having the faintest knowledge of it. But he almost wept with delight as the nose gradually came up, as the machine flew more or less level, with right-hand bank on it as hard as he could push the control stick across.

Like a drooping scarecrow, Hardy was draped over the bracing wires. If he was alive, he gave no sign of it. The Stumbler cut-in his engine and flew dead level, easing the stick back gradually and trying to get height. The ground below was no more than fifteen or twenty feet away.

Then the Stumbler got his direction. He got it because he saw those peculiar trenches again. At first he thought that in the general strain he must have gone clean cracked—for the trenches were widening ! Three great slits in the ground, widened, became rectangles, became squares, even as he watched. Then a sudden concentrated burst of gunfire volleying up from the ground ripped and tore all about him.

Lieutenant Stephen Stumperton positively shrieked with excitement as he brought his machine round in a wide, sluggish circle and headed in the opposite direction. For that direction, he knew, meant home.

THE Stumbler's landing on the home aerodrome a little less than half an hour later, was spectacular.

At the sound of his engine, floodlights were switched on. Those below saw the machine drifting in, low ; saw the set of its ailerons and rudder. Astonished, they also saw some vague, indistinct mass drooping in the bracing wires of the left wing bay. Somebody bellowed an order. Men dashed for the ambulance and started the engine.

The Stumbler came in, made a sluggish and unsuccessful attempt to turn into the wind as shown by a smoke-pot. It seemed that he had difficulty in getting his tail down, for he touched ground rather too fast, swerved frantically, and then went up on his nose with a fine crackling of struts and fabric.

When the ambulance arrived a few seconds later, the men had difficulty in pulling themselves together and gathering up their commanding officer who was lying on the ground beneath the wreck. Meanwhile, Lieutenant Stephen Stumperton clambered awkwardly out of his cockpit, dabbing at a streaming nose.

CHAPTER VIII

The Secret Aerodrome

IN the squadron office, the nearest building to the scene of the crash, the M.O. rose up from his work and heaved a sigh of relief. On a stretcher in the middle of the floor, lay Captain Hardy, seemingly swathed in bandages from head to foot. But a lighted cigarette was sticking up out of his mouth and a faint colour was coming back into his drawn cheeks.

At the telephone, Lieutenant Stumperton, with a bandaged left arm, finished a conversation and hung up the receiver. From overhead the drone of heavy machines could be heard.

"Oh what-ho, what-ho, WHAT-HO !" chanted Stumbler. "Do you hear 'em, Kissme ? There they go. And, by golly, in five minutes' time those tricky Fritzes, with their comic underground-cave aerodrome, will be learning a thing or two ! I was able to plot the position

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exactly. By golly, Kissme, don't you remember I spoke to you the other day about a lot of mine-sap openings I spotted behind Messines? I thought then that Fritz was running out some colossal sap to a mine under our lines. But, of course, he *wasn't*! He was merely digging out a whacking great cave south of Messines, with a sloping runway leading up to the ground, and facing in this direction. He must have carried out all the work at night—on moonless nights when it came to the last part of it. Those sloping runways to the surface, of course, had to be covered over. So he covered them over with darned great screens of canvas, carefully painted to look like shell-holes from above. But I saw 'em moving. I'd thought they were trenches a few seconds before——"

"Yes," breathed Hardy. "Yes, it was a smart trick. Of course, the Hun fitted silencers to those bombers, painted 'em black, and had 'em specially lightened. You see, they only had to fly about a fifth of the usual journey for a bombing raid, so the lack of efficiency caused by the silencers wouldn't matter. It's obvious now that they just waited until our patrols had passed, and then nipped up into the air behind us. When they were coming back, of course, they flew low, cut their engines out and dropped down, like bats going into a hole. Pretty smart!"

He turned aside with an effort and smiled up at his subordinate.

"And, by Golly, Stumbler," he said. "You were pretty smart, too! I thought I was done for! The way you came after me and picked me up like a gull diving for a fish——"

"Keep quiet, Kissme," said the M.O., anxiously. "You've had a nasty shaking up and you're badly cut about. It's going to be a couple of months or so before they let you out of hospital. Still, you've got nothing to worry about if you'll only *rest*——"

"All right, Doc, don't flap about like an agitated hen," said Captain Hardy with a grin. "Stumbler, you'll have to take over. Now I'd just like to check up before I go. Get down that records-book, and I'll show you——"

THE Stumbler breathed sharply with delight. He already knew he was being recommended for a decoration. Modestly, he had tried to refuse it. But he knew that whatever he did, Hardy would put it through. But now, in addition to that, there would be an extra pip!

"Dear old boy, don't worry yourself about things like that, now," he said, and heaved the closed records-book down. "I can look after everything. It won't take me a minute or two to check up. You know, I'm pretty hot at figures, one way and another——"

Cheerfully he opened the records-book, holding it within the range of Captain Hardy's gaze. He opened it at the last entry. The centre of the page curved and half-fell out.

"What the devil——?" breathed Hardy.

For the centre of the page was now a neatly cut-out, but unmistakable representation of a female form. A very female form.

"Holy Smoke!" breathed the Stumbler, and nearly dropped the book. The pages flicked over. Several of the interleaving carbons fell out, and on each neat page there appeared, in purple-carbon outline, yet another female form.

An extremely female form.

"Figures!" breathed Captain Hardy, "and you said you were good at——"

He laughed. He heaved with laughter. He laughed whilst his eyes became wet with tears.

The M.O. became more agitated and hen-like than ever.

NEXT MONTH

An Enlarged and Improved "AIR STORIES"

See the Special Announcement on Page 189

The Gentleman from Java

A Hawker Hart was the Bait
in a Deadly Sky Trap set by
Kinley of the Secret Service to
bring a Killer to the Flaming
Doom he had Planned for the
Gentleman from Java

By
Captain J. E. GURDON, D.F.C.

CHAPTER I

Secret Service

ON the vital Tuesday morning every little detail had been settled as to the manner in which the young gentleman from Java was to perish in the air over Kent at four p.m. precisely.

At two o'clock that afternoon Flight Lieutenant Kinley walked moodily up Whitehall and made his way to a certain little club in Pall Mall, where the members of the most silent of all Silent Services meet from the ends of the earth.

As he had expected, Tony Carew was in his favourite armchair by the window, his eyes closed and an illustrated weekly on his knees.

"Been a devil of a time," muttered Tony, as though talking in his sleep.

"There's been a devil of a lot of talk."

The figure in the armchair opened one eye.

"Job?" he enquired.

"Yes."

"Flying?"

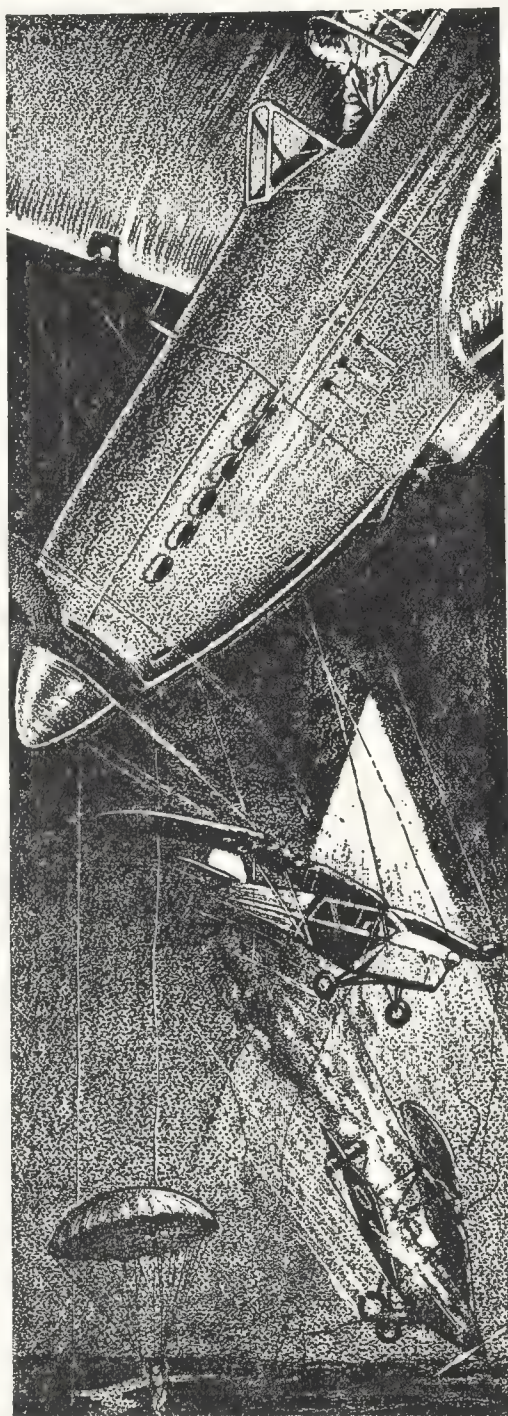
"Yes."

"Interesting?"

Kinley shrugged, grunted and pressed a bell. After a speculative glance Toby appeared to compose himself for slumber again.

"Interesting?" he repeated drowsily, when the tankard of beer had been ordered and brought.

"If you like pushing prams—yes."



As the world spun round, he glimpsed the deadly curtain beneath the stars. . . .

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"I see. So we're nursemaids again, are we? Who's the distinguished infant this time?"

"A Dutch gentleman from Java with a frenzy for flying and the pull of an elephant among the Powers-That-Be. At any rate, to hear them talk you'd think he's rather more precious than his weight in rubies. And so," continued Kinley, morosely finishing his beer, "we've got to go flying with him. And keep on flying with him. And begin flying with him at three-thirty pip emma this afternoon as ever was."

Abruptly he rose to his feet and stared out into Pall Mall, jingling the coins in his pocket. Tony chuckled.

"Tut, tut!" he reproved. "Peevishness ill becomes you. Not but that I am sympathetic. At times, like yourself, I deplore this job of ours. The story writers have got it all wrong. No stolen code-books of vital national importance. No glamorous she-spies drugging King's Messengers with scented cigarettes. Nothing but month after month of toting round with eminent aliens, making sure they don't see anything they want to see, and protecting them from other eminent aliens who would like to strangle 'em in the corner of a hangar. By the way," added Tony suspiciously, "just why is the gentleman from Java supposed to be so valuable?"

Kinley said nothing, but faced his companion with a slow grin.

"You've guessed it," he murmured.

"Not a—not an *inventor*?" croaked Tony.

Kinley nodded.

"One of those revolutionary inventors we read about in the papers every Sunday?"

"Naturally. What do you expect? . . . No. You're not going to have another drink. It's time we got the Bentley out. We're due to meet our friend at the Estuary Flying Club in exactly forty minutes' time. And, for our sins, one of us will be droning about Kent with him at four p.m. precisely."

"TOUCHING this invention," said Tony, as the Bentley weaved its

way in and out of the traffic. "Have you any idea what it is?"

"G.S.I.," returned Kinley briefly.

"What the devil's that?"

"Ground Speed Indicator. Some sort of gadget which measures the actual speed of a machine in relation to the ground, irrespective of wind or drift, and whether the ground is visible or not. At least, that's what Einthoven claims."

"He being the Javanese gent?"

"Holmes, you amaze me! Yes, young Mr. Einthoven is the latest apple of our eye. A Dutchman, too. That's one of the puzzling features of this affair. In fact, it bristles with puzzles. I mean to say, if Einthoven really has hit on something good, why come to us with it instead of going to his own Government like a patriotic Hollander? When I raised the point this morning an officious fool from the Treasury told me to mind my own business, and none too politely at that. Hence the touch of irascibility which you noticed. I don't like working in the dark. After all, what's the use of being in the frightfully Secret Service if one's not allowed to know frightful secrets?"

"No good at all," agreed Tony. "If this lad's telling the truth, though, he's done something good enough to cause quite a lot of a flutter once the news leaks out."

For a moment Kinley did not reply.

"There may be something in that," he admitted. "Anyway, he's going to show us the works after our little bit of aviation this afternoon. Meanwhile, I'll bet he turns out to be a twenty-stone Flying Dutchman who doesn't know a word of English."

CHAPTER II

The Red Blast

IT was a bet which Kinley would have lost.

The young man whom the club secretary introduced was tall, lean, fair-haired and bespectacled; also he spoke English with complete ease and only the barest trace of a guttural accent. Because of his self-possessed yet quiet courtesy, both

THE GENTLEMAN FROM JAVA

Kinley and Tony took an immediate liking to him.

"It is very good of you both to come down," he began. "I will, of course, make you as comfortable as I can, but so far only a little of my furniture has arrived."

"Your furniture?" Kinley looked up in surprise. "I thought you were staying here and that we were going to do the same."

"I was staying here until quite recently but I have just bought a house near by, Marnley Manor. It will be quite pleasant, I think, after renovation and so forth. But," Einthoven looked at his watch, "I was hoping we might do a little flying this afternoon. I want you to tell me what you think of one of my machines. Wiesmann designed her specially for me. It is now just after half-past three so——"

"Of course." Kinley jumped to his feet. "Let's get along."

Walking across to the sheds, he scratched his chin reflectively.

Marnley Manor? One of the biggest estates in the Home Counties. So Einthoven must have money. Lots of money. He wondered if this might account for the presence of the unpleasant Treasury official at that morning's conference in Whitehall.

Suddenly he realised that they had reached the tarmac and were standing by a gleaming little two-seater. Einthoven was talking to a stout, swarthy little man dressed in grimy overalls.

"My mechanic," he explained, turning to his guests. "Schwartz, by name, and a genius by good luck. He looks after my two machines and his brother is the domestic staff at home. And now," he gestured towards the machine, "what do you think of her?"

Kinley took in the points with one quick, critical glance, noting the short span and narrow chord of the tapered, swept-back metal wings; the polished finish of the oval-sectioned fuselage; the exceptionally small fin area, and the sensitive, balanced elevators.

"Looks fast," he summed up. "Nippy on the controls. And, I should imagine,

a bit of a brute to land, in spite of those elegant flaps. Pretty to look at, but why a biplane? Bit old-fashioned, isn't it?"

The Dutchman laughed.

"Technical reasons. I will explain later. Meanwhile, shall we——?"

Just for an instant Kinley paused, slowly drawing on helmet and goggles the while he stared at the machine through narrowed eyes, mentally picturing every possible trick of her flying.

"See you later, Tony," he said suddenly, and climbed into the cockpit.

USED though Kinley was to machines of every type, the biplane's take-off startled him. Scarcely had he even thought of easing the stick back before she dropped her tail and screamed into the zenith like a shell.

"Phew," whistled Kinley. "The kite's clairvoyant."

The same almost uncanny impression that the machine could actually read his thoughts marked every manoeuvre. For many years past his handling of stick and rudder-bar had been purely automatic. If he thought of a roll, his hands and feet did the rest without bidding. In every other machine that he had ever flown, though, there had been a time lag, however short, before the controls took effect. In the Wiesmann biplane, they seemed to work instantaneously, almost in advance of his will.

Kinley sighed with satisfaction.

"This," he murmured aloud, "is what I call a real aeroplane."

He put his lips close to the mouthpiece of the telephones.

"She's a winner," he shouted. "How are you? Feeling happy?"

The Dutchman's voice came clearly through above the engine's snarl and the wailing wind.

"Fine, thanks, but will you steady her for a moment? I wish to observe——"

It was then that it happened.

Kinley heard a faint sharp crack, like breaking metal, and then the red blast was upon him.

At first, it seemed as solid as a sheet of scarlet glass, flung against his face to break into a thousand pieces and shower

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around the cockpit in glittering fragments. Not until the first sharp slashes of pain had changed to the fury of heat did he realise that the scarlet glass was fire and the fragments flames.

"God!" he gasped, snapped off the petrol, opened the throttle to its widest and ripped at the catch of his harness.

From behind him there came the short, hoarse cry of a man who sees death.

Once before, when a tracer had pierced his front tank, Kinley had met and grappled with fire in the air. There had been no parachutes then, yet he had survived. He had no parachute now, yet he fought.

Afterwards, he never remembered how he got out of the cockpit on to the wing. Of that moment, all that lingered were memories of a coldly fierce determination to succeed; of a second's Heaven-sent relief when the red tide seemed for an instant to be sucked back whence it came; and of a smell that lingered long and sickeningly, the smell of the fur smouldering on his helmet's peak.

The second passed and he was hanging in space, feet slithering on the lower plane, one hand clamped to a centre-section strut, the other thrust over the cockpit's edge, still grimly gripping the stick.

As at all times of danger he found himself muttering aloud—

"Blow the flames sideways," he panted. "Sideways. That's the ticket. Keep 'em between the wings. Keep 'em away."

Again the flames gushed from the engine, but the machine was now falling on a vertical wing-tip, her planes as sheer as the walls of a shaft.

Kinley's muscles cracked as they held his swaying weight, until one groping foot found a strut and eased the punishing strain. Head flung back to see the sky, he glimpsed the flames streaming upwards between the wings in tattered banners and rippling folds.

AS suddenly as it began, the inferno ceased.

The last of the scarlet flames tore themselves adrift like the petals of a tulip being

plucked from its stem. After them shot a puff of black smoke which spread and stained the sky like a blot of draughtsman's ink on a blue-print. Then silence fell and the disc of the propeller lost its glittering transparency as the blades began to slow down.

"Good," grunted Kinley. "She's dry. Einthoven!"

The gale whipped the words from his lips.

"Einthoven! *Einthoven!*"

Ludicrously, like the head of a seal rising above a rock's rim, the Dutchman's helmet peered down from his cockpit, the sun glinting on his goggles.

After one hasty glance the head disappeared. Kinley gritted his teeth and shut his eyes in impotent exasperation. So the fool wasn't going to do anything! He'd thrown his hand in and was just waiting for the bump. Well, that finished it!

Almost, in that moment, he toyed with the idea of letting go and getting it over. An incredible happening scattered his anger. Feebly, but unmistakably, the stick began to tug at his numbed fingers.

Kinley looked up.

Grotesquely bent between the two seats, Einthoven was groping in the forward cockpit. The tugging of the stick strengthened. With a cracked laugh, Kinley released his grip, swung wildly outwards and backwards, then, with one last effort of his aching leg, heaved himself up and hooked the elbow of his free arm round the centre-section strut which he held.

The machine rocked violently, levelled up, and nearly rolled over on the opposite bank.

"Steady!" yelled Kinley, all but pitched clean over the fuselage. "Hold her level."

One hand clutching the windscreen, the other pressed hard against the cockpit's edge, he struggled, heaved, slung a foot on to the seat, snatched the stick from Einthoven's fingers, and slid down to find the rudder-bar with his feet.

"Lord!" he whispered. "And they say the age of miracles is past! Engine on fire and a ten thousand foot sideslip on

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a 'bus like a jumping flea, yet we're still here ! "

He glanced at the altimeter, which showed a bare two thousand feet. The engine coughed and bellowed as it sucked in fresh fuel.

"Now," grunted Kinley, suddenly grim, "now, Mr. Blasted-Treasury-Official, now we *will* start minding our own business."

With vicious skill he swung the biplane round and headed her for home.

CHAPTER III

Attempted Murder

A WHITE-FACED Tony, followed by the engineer, ran stumblingly towards the biplane as Kinley taxied up to the tarmac. Unable at first to find his breath, Tony clung to a strut and helped to swing the machine round ready to run into the hangar.

In the shadowed light, Kinley felt a blow between the shoulders and looked round to find his passenger holding out a hand.

"Marvellous ! " cried the Dutchman. "Marvellous ! I thought we were done for. How did you put it out ? "

Kinley raised his goggles to wipe away the sweat which was trickling into his eyes.

"I didn't," he replied. "It blew out. All I did was to cut the juice and give her full throttle to run the carburettors dry as quickly as possible. Once an engine's on fire it's the only thing to do. But, why the devil did she catch like that—Hello, Tony ! Enjoy the pyrotechnic display ? "

Looking up at the cockpit, Tony drew a deep breath.

"Gaudy, but not neat," he growled. "I hope——"

The click of metal on concrete cut short his words.

Schwartz had removed a section of cowlings and was peering and fumbling inside the engine. The Dutchman spoke in a language neither Kinley nor Tony could understand, and the engineer replied without looking up.

"He says he has found a broken elec-

trical connection," Einthoven translated. "That, of course, would account for the trouble. It has happened to aeroplanes before."

Kinley frowned.

"It has," he admitted slowly. "All the same——"

Suddenly and quickly he began to climb out of his seat, gripping Einthoven's arm as he did so.

"Call your man off," he said. "No doubt he's right. I want to look myself, though. Tony, get busy with the club secretary and shoo away the inquisitive. Say we'll put in all reports and whatnots later. Meanwhile——"

Schwartz stood aside as he leapt to the ground, but pointed to a chafed and broken high tension lead.

"Humph," grunted Kinley, then fished an electric torch from his pocket and began a meticulous examination of the engine.

Ten minutes later he stood up, idly stuffing the torch and a handkerchief back into his pocket. Returning from his task of persuading the interested little crowd to disperse, Tony noticed that his friend's face had set in familiar lines of concentrated thought.

With a nod of acknowledgment to the mechanic Kinley beckoned Einthoven aside.

"Can we get along to your place without being held up at the clubhouse," he asked. "I want to talk to you."

The Dutchman looked at him curiously but said nothing and led the way to the back of the hangar, where he opened a side door.

"Across this road and a couple of fields and we are home," he said. "Now what ? "

"Your engineer," began Kinley abruptly. "Are you absolutely sure he's reliable ? "

"Absolutely. He knows almost as much about my researches as I do myself."

Kinley whistled.

"The devil he does ! That's interesting."

"Except, of course, for the results of the concluding and crucial experiments,"

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continued Einthoven. "But then even I can't quite tell how those are going to turn out."

"No," agreed Kinley. "I suppose not. And does Schwartz know the nature of the experiments you have in mind?"

The reply was decisive.

"He does not. As an expert assistant I allow him to follow my researches, but not to precede them."

With a sigh Kinley ran a hand through his hair.

"Another good idea's gone bust then," he lamented. "Have you known him long?"

"He and his brother have been with me several years. In fact they accompanied me from Java."

Einthoven paused and laughed.

"If you're suspecting poor Schwartz of anything worse than a little carelessness you're wasting your time," he continued. "I should be lost without him. He not only looks after my engines, and helps in the practical laboratory work, but has also done a lot of flying for me. He is a first-rate pilot, whereas my eyes are not sound enough for me to handle anything but the easiest machines. That was why I begged the services of someone like yourself. I would not trust even Schwartz with the Wiesmann, or with the aeroplane which I hope we shall be using to-morrow."

Kinley nodded.

"I heard about it this morning. Specially built for high flying, and so forth, eh? You want to test your apparatus at forty thousand feet or thereabouts? Quite so. Well, since the brothers Schwartz are by way of being pals of yours, I suggest you put them on guard over the monoplane, and make them stay put all night."

Einthoven halted in his tracks, but Kinley motioned him to silence.

"Just a minute. I understand that your research machine has been kept under lock and key ever since she arrived?"

"That is so, but——"

"Whereas the biplane has been in an open hangar with people coming and going all the time?"

The Dutchman looked Kinley straight in the eyes.

"Yes," he answered. "And you are telling me that you suspect sabotage, eh? Well, that would not have been impossible, because Schwartz has spent much of his time on the monoplane."

Kinley glanced at his watch.

"Can you lend me a car?" he asked. "I am going to Town, but the Bentley must stay here. So must you, Tony. If there's dirty work afoot I want it to seem that we're still on the premises."

IT was just two hours later that Kinley drove Einthoven's sports-car away from the laboratory of the distinguished chemist who more than once had helped the Service, but he drove without the electric torch and the handkerchief which he had stowed away so casually in the hangar.

"There are glycerine stains on the handkerchief with which you cleaned the engine bearers," the chemist had said. "The crystals, which you scraped up in the cap of the torch from the bottom of the cowl, consist of permanganate of potash. Both of them very common substances and yet in contact with one another they infallibly produce fire. I assume that they were contained in separate compartments of a vessel made of some combustible material and equipped with a simple timing device which would cause them to mix at a pre-arranged moment. May I keep these exhibits? The idea is most ingenious."

Turning these words over in his mind as he drove, Kinley suddenly grinned.

"Most," he whispered softly to himself, and took a short cut to the Treasury.

BY arrangement, Kinley and Tony shared a room at Marnley Manor that night.

"I wanted to talk to you alone," Kinley explained, shutting the bedroom door. "There's something very queer, very complicated, and very fishy going on. I don't want Einthoven to know it yet, so I kept mum this evening, but that 'bus——"

"Was deliberately set on fire," completed Tony.

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"Exactly. Some sort of infernal machine had been stuck between the engine and the front tank. If we hadn't kept the flames blowing out at one side the heat would have made the tank go bang. And there wouldn't have been much need to bother the coroner after that."

"Schwartz, of course?"

"Apparently not. That's the queer part of it. He is the obvious suspect, but it seems we've got to wash him out because it's dead against his interests to do Einthoven in. He already knows all there is to know about this precious gadget, and if only he waits until the last experiments are finished he'll hold the whole bag of tricks. Supposing, therefore, that he really is working for a double-cross, his game must be to cherish the young master until he's delivered the goods. Agreed?"

Tony scratched his head.

"Put in that way it sounds sense," he admitted. "Yet there's a nigger in the thicket somewhere. Got any ideas?"

For a moment Kinley was silent.

"It may sound crazy," he said slowly, "but I can't get that Treasury bloke out of my mind. He doesn't fit into the puzzle and yet I feel certain he's the key piece. I mean, this is essentially a Service job, so why drag him in? I saw him again this afternoon and asked him why, point-blank. He just smiled and said that he would refer my enquiry to the head of his Department. That had me beat for to-night at any rate. So I came back. To-morrow though. . . . And talking of to-morrow reminds me that we're due to fly to colossal heights at dawn. Good-night."

Kinley climbed into bed and responded to all further questions by feigning complete unconsciousness.

CHAPTER IV

Death in the Heights

DAWN found both airmen in the sealed cabin of the high-flying monoplane which Einthoven had had built to his own design. Kinley was at the controls with Tony by his side, and the

Dutchman sat surrounded by electrical apparatus in a seat just behind them.

At first, neither had been quite happy at the prospect of flying to such great heights without pressure suits, or even ordinary oxygen apparatus, but in the end each was reassured by the ingenuity of Einthoven's devices for the isolation of the cabin and the unfailing supply of breathable air at varying atmospheric pressures. From this reassurance sprang a keen admiration for the inventor's brains, and, particularly in Kinley's mind, a growing realisation of the great financial resources which he must have at his command.

With the altimeter showing twenty-five thousand feet, Kinley swung eastwards towards the sea. The sun, already high over long horizontal banks of cloud, struck a myriad orange sparks from the ribs and fans of ice which frosted the cabin windows. Inside the cabin all was warm and quiet except for the steady drumming of the engines.

At twenty-eight thousand Kinley looked at Tony and smiled. "Don't stick your elbow through the window," he warned. "It wouldn't be altogether healthy."

Behind them the Dutchman chuckled.

"He'd have to use a hammer to break the glass," he retorted. "We're safe enough. Will you fly true north magnetic now, please? And would you like to hear how the apparatus works?"

"We've been waiting," said Kinley truthfully.

"It is so simple," explained Einthoven, almost apologetically. "The earth—the world—has a magnetic field. If a coil of wire cuts that magnetic field you get a current of electricity, and the more coils you have, and the faster you cut the field, the greater the flow of electromotive force."

"All right. Now, in the magnetic field we have our standard for measuring ground speed and drift, a standard wholly unaffected by the strength or direction of the wind. It is the only conceivable standard. The lines of force in the magnetic field give us our milestones. And so for low altitude work I use

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a biplane to give more scope in the wings for the necessary coils. That answers one of your questions, Flight Lieutenant. But, in addition to that, we rotate our coils. They are inside the wings—very simple when you know the mechanism—so that any point on the coil is moving not only round but forward, like a speck of mud on the rim of a bicycle wheel. In fact, we might compare it to a spiral spring being pulled out. And then——”

“Sorry to interrupt,” said Kinley, “but there’s something which I’d rather like to look into.”

His eyes were fixed upon a faint discolouration in the roof panelling. At the moment it was no bigger than a penny, but it was spreading rapidly outwards, along a semi-circular edge, like the growth of fungus on a damp wall.

Throttling back, Kinley eased the stick forward, and silence fell like the soft descent of a blanket. It was a silence broken only by the sigh of air escaping from the cabin.

“Gosh !” choked Tony, then coughed and gasped.

Einhoven wrenched at his collar, as though to tear it away, then clapped his hands to his ears and groaned.

Like a stranger shouting above the roar of the sea, Kinley heard his own voice, but louder even than his voice there hissed the impatient escaping air. The discolouration had grown to the span of a man’s hand, webbed like a spider’s web by silvery cracks. The grooves of the panelling were rattling with brittle crackles.

“Swallow,” he called, yet the cry was a croak. “Keep on swallowing. Don’t let air pressure . . . burst . . . ear drums . . . careful now . . . everything’ll be all right. . . .”

The many words jumbled into one, yet a word which acted like a talisman, which his mind kept repeating again and again. . . . “Everything will be all right. . . .” Of course everything would be all right. . . . It had to be all right. . . . It must be all right.

The strained panel split starwise from the browned centre, and parted along its

glistering ribs, to be shattered by the gale in a flurry of triangles, scimitars and gleaming flakes.

Kinley trimmed the tail for gliding and pressed the heels of his hands against his head. His ears drummed and his temples pulsed. As he swallowed, his palate seemed to ring to the breaking of buckled tin.

His fist found the stick, and the muscles of his legs tensed, then relaxed to the familiar balanced pressure of the rudder-bar. The machine’s nose steadied and the rushing altimeter checked to a gentle drop.

“All well, Tony ? ”

“No. I’m going to be sick.”

“Then be, with my blessing. How’s Einhoven ? ”

“Ain’t-hovin’ a lovely time. Ha, ha ! Joke ! . . .”

The altimeter needle wavered around fifteen thousand before beginning a steady, comfortable fall.

“Joke over,” said Kinley.

BECAUSE he wished to avoid making a second spectacular appearance upon the club aerodrome, Kinley landed in a long meadow behind Marnley Manor, after a descent which he deliberately prolonged so as to acclimatise himself and his passengers. Thanks to this precaution, each had made a good recovery by the time they reached the ground, though they were still suffering from partial deafness and splitting headaches.

Before the machine had run to a standstill a thick-set little man emerged from the house and trotted towards them. Kinley switched off, opened the roof, and stood up.

“Schwartz minor ? ” he asked quickly, with a nod towards the hurrying figure.

Einhoven nodded in silence and swung one leg over the side of the fuselage.

“Then tell him that the machine’s not to be moved, and that both he and his brother have got to stay right here. The trusty mechanic is bound to be along in a minute—in fact I see him scooting up the road now. Well, let him scoot. We three have got to do a spot of earnest talking. Also, I could manage a drink.”

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"Same here," Tony agreed fervently.

Einthoven jumped to the ground and spoke rapidly in Dutch. The manservant bowed gravely, though his eyes were fixed on Kinley with an expression of intense curiosity.

"And now," ended Einthoven, clapping a hand on Tony's shoulder, "we will go up to the house and sample some rather special whiskey I have recently acquired."

In a room clearly used as a study, Einthoven produced decanter and glasses and poured out three strong drinks. Except for a muttered toast, none spoke until the glasses had been emptied and refilled.

"Definitely what the doctor ordered," decided Kinley, sinking into a chair and filling a pipe. "Brains being clear once more, we will now go into committee, and the first item on the agenda, Mr. Einthoven, consists of one question—'Where does the Treasury come in on this show?'"

Frowning as though embarrassed, Einthoven hesitated.

"Well," he began slowly, "I am really hardly at liberty to——"

"One moment," Kinley's voice was soft, almost purring, but Tony detected a familiar steely undertone. "Just one moment, Mr. Einthoven. Within the last twenty-four hours we have escaped, by amazing good luck, two cold-blooded and damnable attempts at murder."

"Two?"

"Yes—two. An incendiary gadget had been rigged up inside the Wiesmann, and when you examine the monoplane I've no doubt you will find that the original safety glazing of the roof has been replaced by some material specially intended to change its chemical structure at low temperatures, and so go *phut* through unequal contraction. Any competent chemist could work out the necessary formulæ. At the moment, though, I am not interested in methods, I'm only interested in facts—and the principal fact which interests me is the motive behind these ruthless efforts to bump you off."

"My scientific work——"

Kinley snorted.

"Forgive my being blunt, but you'd better tell that to the Marines," he interrupted. "I quite grant that your ground speed indicator is important—so important, in fact, that no sane man is going to try to do you in until you've worked out the full details. So we can wash that out as a motive. No, there's something more behind all this, and that something links you up with the Treasury. That being obvious, will you kindly explain?"

With a troubled face Einthoven rose and paced the room. His reply, when it came, seemed utterly fantastic.

"I shall be twenty-five years old tomorrow," he announced.

There was silence until Tony murmured a polite "Many happy returns."

"My congratulations also," added Kinley. "I confess, though, that the occasion hardly seems to call for either incineration or suffocation."

At that Einthoven laughed, and Kinley was relieved to see the obstinacy leave his eyes.

"Very well, then," he chuckled, "I'll tell you all about it."

CHAPTER V

Motive for Murder

FOR the next twenty minutes Kinley and Tony listened, with close attention but imperfect understanding, to an explanation which sounded to them like a lecture on international finance, strongly flavoured with melodrama.

"I see—more or less," mused Kinley, when at last the recital was ended. "It amounts to this, then. Your father was Dutch and your mother an Englishwoman. At the age of twenty-five, under the terms of your father's will, you come into sole possession of property which will not only make you one of the wealthiest men in the Far East, but which also includes mineral and other concessions whose value cannot be estimated. Because you are half English, you want this country to share those concessions, and that is where we first make contact with the City of London and the haddock-faced trout at the Treasury.

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"But your potential property also includes certain islands of great strategic value, and for that reason the whole business has involved extremely hush-hush pow-wows between the Netherlands Government and our own. The negotiations have, however, now been satisfactorily settled, and it only remains for you to reach the age of twenty-five and then you can sign on the dotted line to the satisfaction of all concerned. Whereupon, no doubt, certain stocks will soar, certain interests in the City will make a pile, and the Treasury will bag a brand new field for future taxation. Hence the smug secrecy of that fish-faced blood-sucker."

"I thought you said he was a trout," Tony corrected gently.

Kinley ignored him.

"There is, however, a nigger in the ointment and a fly on the wood pile," he continued firmly, "for if you *don't* reach the mature age of twenty-five, then, according to the will, the whole caboodle, lock, stock and barrel, goes to a certain cousin Hans, and little Hans—so I gather—has plans very different from your own. What those plans are needn't concern us for the moment, except for two points of considerable personal interest. . . . One is that the said plans have already involved two strenuous efforts to cut short your promising career. The other is——"

"Yes?" prompted Einthoven when Kinley paused.

Kinley was smiling, though his eyes were cold with resolution as he leaned forward and tapped the Dutchman's knee.

"The other is that you've got to die before midnight to-night," he ended.

"Loud cries of 'Shame'!" ejaculated Tony with indignation. "And yet," he added thoughtfully, "your analysis of the situation is undoubtedly correct. It's obvious enough that quite a number of people consider that Mr. Einthoven has already lingered far too long. Question is—are they likely to have another crack at him before Big Ben booms?"

"Pretty certain to, I think," said Kinley. "That being so I suggest we

start a little private hate of our own."

"Meaning?"

FOR a moment Kinley did not reply, but watched the smoke curling upwards from his pipe. Einthoven looked from one to the other, and Tony noted with approval that the cigarette between his fingers was glowing without a tremor.

Kinley spoke suddenly as though he had seen his plans complete and found them good. He grinned at Tony.

"To-night," he said, "three squadrons of bombers and four of interceptors will be in the air carrying out exercises to test the defences of London. Now, isn't that nice for us?"

Tony wrinkled his nose in thought.

"Why?"

"Because, by special permission of the Air Council, we shall join them."

"Again why? I should have thought a better plan would have been to escort our friend here to the nearest police station and have him locked up under armed guard until 12.1 a.m., when he can sign his various papers and cousin Hans can go and jump into the river."

"As a matter of fact I was going to propose something of the sort," said Kinley. "My scheme, though, is a trifle less austere." He turned to Einthoven. "It seems to me," he went on, "that you won't really be out of the wood even if you do survive the night and attend to the necessary formalities to-morrow. Lawyers have a most damnable genius for stirring up trouble and holding up good intentions. If, therefore, your sweet coz. manages to get you blotted out within the next week or so, I'll bet a drink to a dummy that an assorted gang of bigwigs will raise such a dust about winding up your affairs that the whole business may drag on for years—and during that time anything may happen. Don't you agree?"

"I do," said Einthoven simply.

"In addition to that," continued Kinley, "we've got to remember that your G.S.I. work isn't finished yet. Now that we've got to the bottom of it all we realise that the G.S.I. is only a sideline as far as the Big Business interests are

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concerned. In fact the Treasury—or whoever's behind them—simply made use of it in order to give us Service people the responsibility of looking after you. They were the cat, we were the monkey's paw, and you were the chestnut in the fire—only they didn't want us to know that the fire was actually there in case we let a whisper get around and their little money-making schemes were endangered."

Tony uttered a curious whinny of pent-up rage.

"May they be——"

"Hush!" reproved Kinley. "We will deal faithfully with them later. Meanwhile I want to point out that, from the Service point of view, your G.S.I. is a slight more valuable than your mineral concessions. And so—if for that reason alone—we've not only got to see you through to-night, but"—he paused, smiling slowly as though relishing some prospect—"but we've got to clear the air, once and for all. That brings us to Tony's idea of locking you up in the police station, and my own rather more comfortable alternative. I propose to take you to a club of ours in Pall Mall. There we shall find two utterly reliable blokes who will stick to you like shadows. After which I want you to stay inside the club, no matter what happens, until further notice . . . and leave the rest to us."

"I shall do exactly what you want in every way," the Dutchman promised.

"Good."

Kinley jumped to his feet.

"In that case," he said, "we will beat it for London as fast as we can in my car. There's a lot to be fixed up. Before we go, however, I want you to explain very clearly to the Brothers Schwartz that you will be up with us watching the air exercises to-night; that we shall be flying about here, between ten and midnight, in a machine conspicuously illuminated by two white lights on each wing, in addition to extra bright navigation lights; that you suspect sabotage in connection with both the Wiesmann and the monoplane, and that you therefore charge them to keep the strictest ground watch."

"Whoops!" said Tony.

"When we get to Town," Kinley continued, "we will make the necessary arrangements for to-night's aviation. During the night we shall do a little air-clearing. And to-morrow—or possibly even this afternoon—I shall visit the Treasury, and, in a few well-chosen words, explain the merits of candour when dealing with the Secret Service to a certain trout-faced haddock."

"So he's changed species again," Tony reflected. "That chap certainly seems a very queer fish."

CHAPTER VI

The Web of Doom

CHILLY drizzle blew across the tarmac at ten o'clock that evening as Kinley and Tony strode to and fro in front of the hangar, waiting for the engines of their two aircraft to warm up.

"G-gosh," stuttered Tony, hitching up his parachute harness, "isn't it c-cold? Wish I was back at the club swigging Scotch with jolly old Java."

Kinley grunted absent-mindedly. Tony babbled on through chattering teeth.

"And as for that Treasury trout—or is he a haddock?—I hope you gave him one damn good ticking-off."

"I did," said Kinley grimly. "The fool! Keeping all the essential facts to himself and letting us blunder blindly into a death-trap. Obviously we wouldn't suspect Schwartz as long as we thought it was only a matter of the G.S.I., but if I'd dreamt for a moment that money had a finger in the pie—well I wouldn't have taken that monoplane off the ground without pulling every bit of it to pieces. In fact, all our lives were risked for the usual idiot notion of having to preserve financial secrecy at all costs. And now—blast it—you've got to run a hell of a risk just to make life sweet and safe for the Treasury Trout, the City Coves and the young gentleman from Java."

Tony laughed cheerfully.

"Oh, I'll be all right. What's more, it's about time we got going. Well—is everything clear? . . . No signals between us in case the First Murderer picks

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'em up. . . . You will, however, give me one buzz on the wireless when it's lighting-up time, and two buzzes when the great moment has come. Correct ? "

"Correct," echoed Kinley gravely. "Be both good and careful."

With a nod they separated and climbed into their cockpits. Two engines roared and two machines, one a Fairey Battle bomber and the other a Hawker Hart, skimmed the silvered turf, to be swallowed up by the night like moths in outer darkness.

FOR half an hour Kinley flew by instruments alone, focusing every faculty of his mind upon the problem of navigation on which Tony's life depended.

At fourteen thousand feet the air was clear, though a high, moonlit mist domed the sky with a greenish sheen. Somewhere between the clouds below and the mist above there flew, he was sure, a killer. Peering around and behind he prayed that Tony had never lost sight of his tail-light.

Another seven minutes passed, then his gloved hand firmly pressed a key by his side.

Five thousand feet below him Tony's earphones buzzed, and, for the first time since leaving the aerodrome, he turned on all his lights. Forty miles away, on the ground, a technical officer heard the same buzz, and pulled the lever of a switch.

Kinley sighed with relief as he saw the little cross of lights pierce the gloom beneath him, for he knew then that Tony's flying had been true. Staring ahead again he picked out a row of faint green stars slung across the skyline.

Fingers touching the wireless key, he watched the row of stars sweep swiftly and steadily towards him. The second hand of his stop-watch jerked ten times.

The key clicked twice.

On a vertical wing he swung about and throttled back his engine. A tug on a ring released a parachute flare. White and dazzling its light stabbed down.

As the world spun round he glimpsed the deadly curtain which hung beneath the stars ; saw also a brightly-lit machine which plunged into the dangling wires, to

baulk and break like a fly in a web : and close upon the first there also hurtled a grey, winged shape, then all became merged into one splintering splash of scarlet.

"God ! " breathed Kinley.

Sick and cold he held the dive, searching the white cone of light. Seconds passed into minutes, and the sweat grew icy upon his face before he picked out a tiny glistening thing that was sinking earthwards, gently, yet swaying so that at times it showed a cup-like rim with scalloped edges.

"Good old Tony ! " he yelled, yet never knew that he had spoken. "Oh, good old Tony ! "

EINTHOVEN looked up from the morning paper with an awed air.

"It only says here," he remarked, "that during last night's air exercises two machines crashed into a balloon apron. The pilot of one escaped by parachute, but the second machine exploded from some unknown cause and its occupant has not been discovered. Do you mean to say—do you—— ? "

Unbelievably, he stared from Kinley to Tony and back again.

"We do," beamed Tony. "In me you behold the thoughtful gent who'd remembered to take his umbrella. Brother Schwartz I regret—or am glad—to say was the explodee. *Voilà.*"

"You see," explained Kinley, as Einthoven still struggled for words, "it was fairly certain that Schwartz would have another go at you as soon as you told him we'd all be flying around in the neighbourhood, all lit up like a Christmas tree. Just what stunt he'd try, of course, we couldn't be sure about, but I rather suspected he'd sneak up really close and neatly drop some sort of bomb on us. Judging from the way he went bang at the finish, that was precisely his idea. So we just lured him on, so to speak, until he'd come a purler if he was up to any dirty work, and, having lured, Tony bailed out in the nick of time."

"But how could you judge—— ? " began Einthoven.

"One buzz, switch on lights when

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already close to snare," interrupted Tony. "By special permission of the Powers-That-Be, said buzz was also signal for wireless wallah on the ground to illuminate balloons, thus assisting young Kinley for our second act—namely, two buzzes, when crash was imminent and it was time for me to put up the umbrella. . . . And I don't mind telling you I was getting a trifle impatient."

For a moment Einthoven said nothing, then solemnly shook hands with each man in turn.

"Thank you," he said. "I—I cannot properly express myself. I—I am surprised by Schwartz's conduct. . . ."

Soothingly, Tony patted his shoulder.

"Cheer up," he begged. "I'll bet you're nothing like as surprised as he was."

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TRIBAL WARFARE AVERTED BY THE R.A.F.

Eight Vickers Vincents Quell Native Unrest Without A Single Shot—Britain's Air Strength Grows Apace—R.A.F. Personnel Now Exceeds 60,000

DETAILS have recently been released of operations performed by the Royal Air Force in the Middle East for the protection of the Beir tribe against attacks by the Annuaik tribe.

The local authorities in the Pibor district had asked for the assistance of the Royal Air Force, and it was arranged that reconnaissances and demonstrations should be made over Ajwira and Utalo. Eight Vickers Vincent aeroplanes belonging to No. 47 (Bomber) Squadron therefore flew to Malakal and on the day after they arrived there the first demonstration was made.

It was intended to allow an interval of three days and then to make another demonstration; but meanwhile an affray occurred near Abiche and it was decided that the second demonstration was immediately necessary. The aeroplanes again went out and, as a result of their menacing appearance, the political authorities were satisfied that the desired result had been achieved.

Afterwards the aircraft were withdrawn to Khartoum. Malakal, from which they made their flights, is some 250 miles distant from the scene of unrest. Consequently the machines had to fly over 500 miles for each operation. Their difficulties were increased by bad weather, with heavy rain and by the absence of landing-grounds along almost the entire route.

An R.A.F. "Maid of All Work"

COMING in the category of general purpose aircraft, the Vickers Vincent, with which No. 47 Squadron performed these operations, is a three-seater biplane, powered by a Bristol Pegasus engine. In order to fit it for a large variety of different duties, the Vincent, which is the "maid of all work" of the R.A.F., carries unusually comprehensive equipment.

This includes navigational instruments, hand-operated inertia engine starter, sleeping-bags for the crew, drinking water tank and emergency rations, intercommunication speaking-tubes, oxygen-breathing apparatus, first-aid outfit, wireless telegraphy and telephone, both transmitting and receiving, with masts for emergency use from the ground, electrical gear for lighting and other purposes, automatic air cameras, a Vey pistol and a set of pyrotechnic signals, fire extinguisher, safety-belts, parachutes, maintenance ladder and tool kits, message picking-up gear, a full complement of guns and bombs and, as an alternative to the armament load, an underslung auxiliary fuel

tank. With this tank in use the cruising range is extended to 1,250 miles. In all about 4,250 lb. of fuel, crew and military load can be carried.

The general purpose aeroplane is a type which has been extensively developed for the Royal Air Force, and which has been found to be valuable for the performance of police duties in outlying parts of the Empire. Flying qualities which are needed in this type are good speed range, the ability to land with a short run and good manoeuvrability both on the ground and in the air. Wing slots are fitted to the Vincent to give it a wide speed range, and the machine also has wheel brakes and oleo-pneumatic shock absorbers.

R.A.F. Expansion Progress

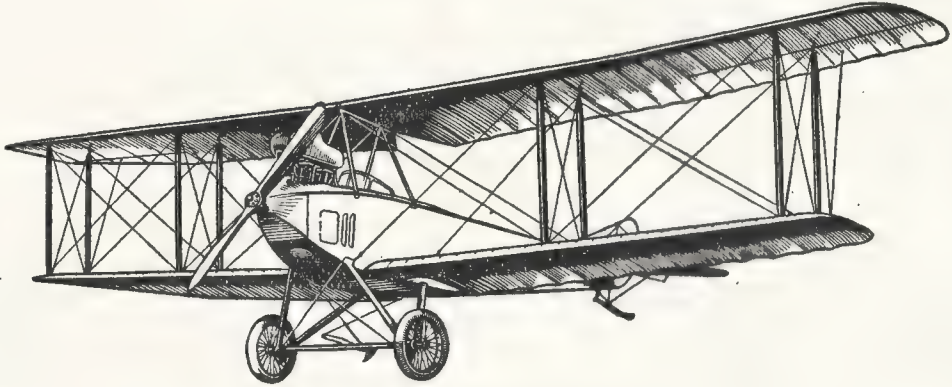
LATEST figures show that the Royal Air Force expansion scheme decided upon in May, 1935, is now reaching its peak. Not only is the production of the new aeroplanes working up to full pressure, but, in addition, the personnel strength of the Service is being rapidly increased. Already over twenty-five new stations and armament training camps have been opened and a further twenty-one sites have been selected.

Since April 1st, 1935, some 3,850 pilots have been selected and some 3,500 have already completed or are in the course of completing their training. Since the same date 25,200 airmen have entered the Service, this figure being made up of 1,164 skilled fitters, 8,050 mates, flight mechanics and flight riggers, 3,526 wireless operators, armourers and photographers and 12,460 other trades. In addition, about 4,840 boys are undergoing training at Halton and Cranwell as aircraft apprentices, and elsewhere 960 as boy entrants. The total strength of the force is now about 60,500.

Meanwhile, the squadrons have received the new aeroplanes which were ordered "off the drawing board" when the expansion first began. Among the new types already in service with full strength squadrons are the Bristol Blenheim, fastest bomber in service in the world, the Vickers Wellesley, the geodetic monoplane, the Handley Page Harrow heavy bomber and the Fairey Battle single-engined bomber.

The total strength of the Royal Air Force is always an official secret, but recently it was officially announced that R.A.F. strength in first line aircraft, that is immediately effective machines, and exclusive of reserves, training types, etc., amounted to approximately 169 squadrons.

FAMOUS AIRCRAFT OF Warplanes of Germany and the Allies



THE ALBATROS B.2

A FAMOUS "early bird" which first saw active service late in 1914, the Albatros B.2 was a two-bay biplane whose extensive wire-bracing earned it the nickname of "The Parrot Cage" among pilots. Powered with a 100-h.p. Mercedes engine, it had a top speed of about 78 m.p.h. and was one of the first German aircraft to be fitted with a machine-gun. An infantry-type Maxim was mounted on a primitive type of gun-ring on the observer's cockpit, and, despite the great weight of both gun and mounting, the installation gave good service for some time. The curious-looking structure over the top of the engine was the exhaust manifold system which led exhaust gases

from the engine up and over the top of the main plane.

The Albatros B.2 became obsolete late in 1915, but remained in use as a training machine for some time after it had been withdrawn from active service. It was, incidentally, one of the first military aeroplanes to be designed by Doctor Heinkel, the talented German aircraft designer who was later to be responsible for many of the Brandenburg and Gotha types, and whose name is still famous in the German aircraft industry of to-day.

The chief dimensions of the B.2 were a span of 43 feet 7½ inches, a length of 31 feet 8 inches, and a height of 11 feet 6 inches.

THE BRANDENBURG P.12

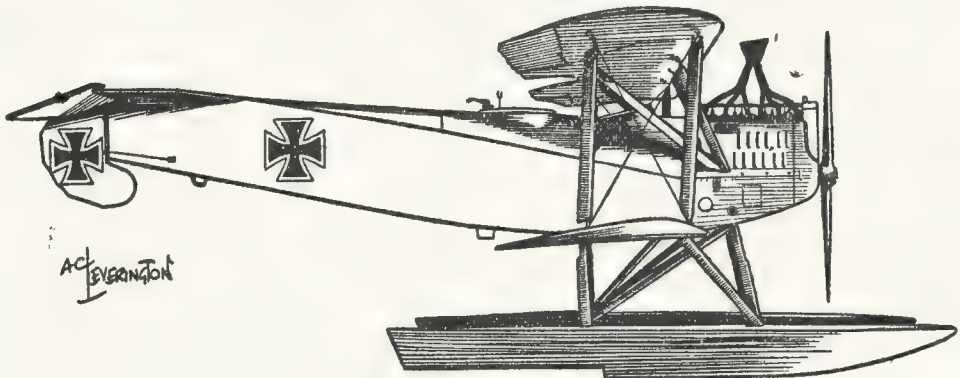
THIS curious-looking twin-float seaplane came on to the scene in 1916 and saw much action off the Belgian coast, where it was opposed by R.N.A.S. squadrons. Several flights of Brandenburgs were stationed at Zeebrugge and were responsible for numerous raids on Belgian coast towns and for the harassment of British men-of-war in the Dover Patrol.

The placing of the fin and rudder almost entirely below the elevators gave the fuselage a curiously upside-down look, but the arrangement had the advantage of affording the rear gunner an excep-

tionally wide field of fire, without risk of shooting his own tail-unit.

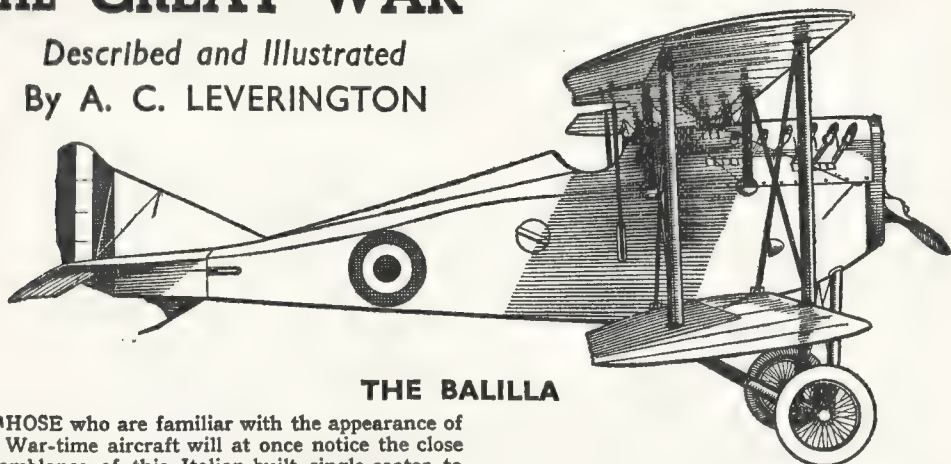
The sketch below depicts the machine which was flown by the famous German naval "ace," Christensen, C.O. of the Flanders' seaplane squadrons, and was the one in which he had a number of spectacular encounters with R.N.A.S. pilots from Dunkirk.

The P.12 was fitted with a 120-h.p. Mercedes engine and had a maximum speed of 94 m.p.h. It was 25 feet 6 inches long, 9 feet 4 inches high and had a wing span of 34 feet 6 inches.



THE GREAT WAR

Described and Illustrated
By A. C. LEVERINGTON



THE BALILLA

THOSE who are familiar with the appearance of War-time aircraft will at once notice the close resemblance of this Italian-built single-seater to the famous French Spad. The similarity is no coincidence for the Balilla was, in fact, based on designs drawn by the French S.P.A.D. concern and was after known as the Spad 6.a.

The biplane was used in large numbers by the Italian Air Service and, though primarily intended as a scout, was also used with considerable success for bombing purposes, the bombs being carried in racks beneath the lower main planes. Various

types of engines were fitted from time to time, including the 220-h.p. Ansaldo, the 220-h.p. Hispano-Suiza, and the S.P.A. The most popular installation was the Hispano-Suiza, and with this power-unit the Balilla had a top speed in the region of 122 miles an hour.

Principal dimensions were a span of 26 feet 8 inches, a length of 20 feet 6 inches, and a height of 8 feet 10½ inches.

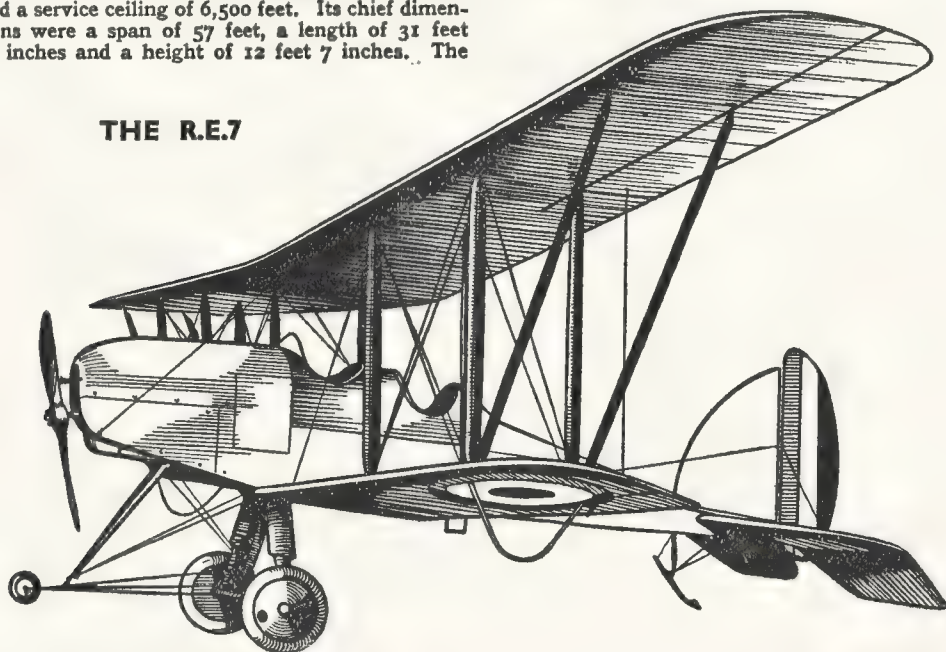
ANOTHER of the "early birds" of the Great War, the R.E.7 was a two-seater biplane designed and built by the Royal Aircraft Factory at Farnborough. It first appeared in 1915, and though its initials stood for "Reconnaissance Experimental," the type was used for fighting and bombing duties as much, if not more, than for reconnaissance work.

A 150-h.p. Raf engine gave it a top speed of about 88 m.p.h. It had an endurance of six hours and a service ceiling of 6,500 feet. Its chief dimensions were a span of 57 feet, a length of 31 feet 10 inches and a height of 12 feet 7 inches. The

third landing wheel, carried on an outrigger projecting beyond the engine, was a precaution against the machine nosing-over on rough ground.

The R.E.7 was superseded by the R.E.8, or "Harry Tate," but before it passed it won a place in history as the mount in which Second-Lieutenant W. B. Rhodes-Moorhouse won the first V.C. ever awarded to an airman.

THE R.E.7



No Pilot of the Fleet Air Arm ever Disgraced Himself by Scoring more "D's" than did "The Scrubber"—and his Last was the Greatest "D" of All

CHAPTER I

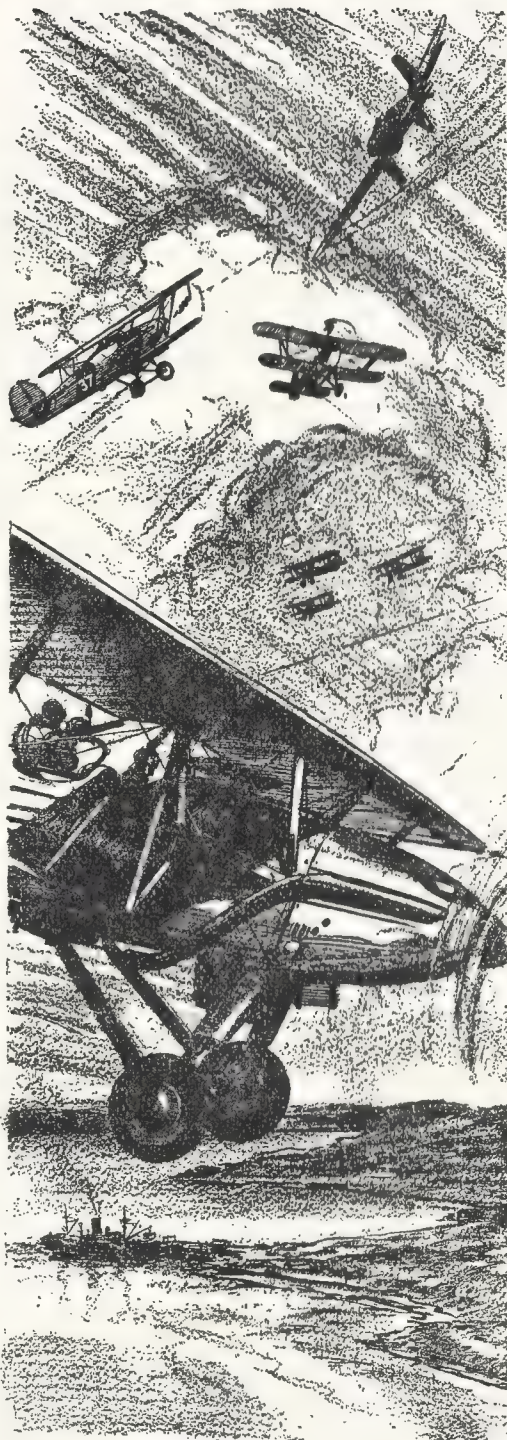
Enter "The Scrubber"

HIS fond but misguided parents had christened him David Patrick Andrew St. George Parker. His shipmates at one time proposed to call him the "United Kingdom," or "U.K." for short, but, damp though the climate of the British Isles may be, it wasn't nearly as wet as young Parker. So "The Scrubber" he became, and I, who was his observer, only once called him anything else or, to be more accurate, anything else that can be repeated.

One night in the wardroom after dinner, when there was to be no flying next day and the Scrubber was nearly as wet inside as out, he confided to me that his ambition was to be called David. He said it was a sign that one was popular, that men accepted you as their equal, if you were known by your Christian name; that he had always been called "David" at school, and that he had hoped, when he took a short service commission in the Royal Air Force, that he would still be called "David."

He was a romantic youngster, and I think that he had been reading too much Kipling and "Sapper" and other writers of the wide-open spaces where men are men, and had got his ideas a bit muddled. But the wardroom of one of his Majesty's aircraft carriers is not a wide open space, it's a damned uncomfortably enclosed one, where Christian names are not much in use. And, since a scrubber, which is a brush used to wash the decks when they are being sluiced down with water from the fire-hoses every morning, was the wettest thing we

"D's" FOR



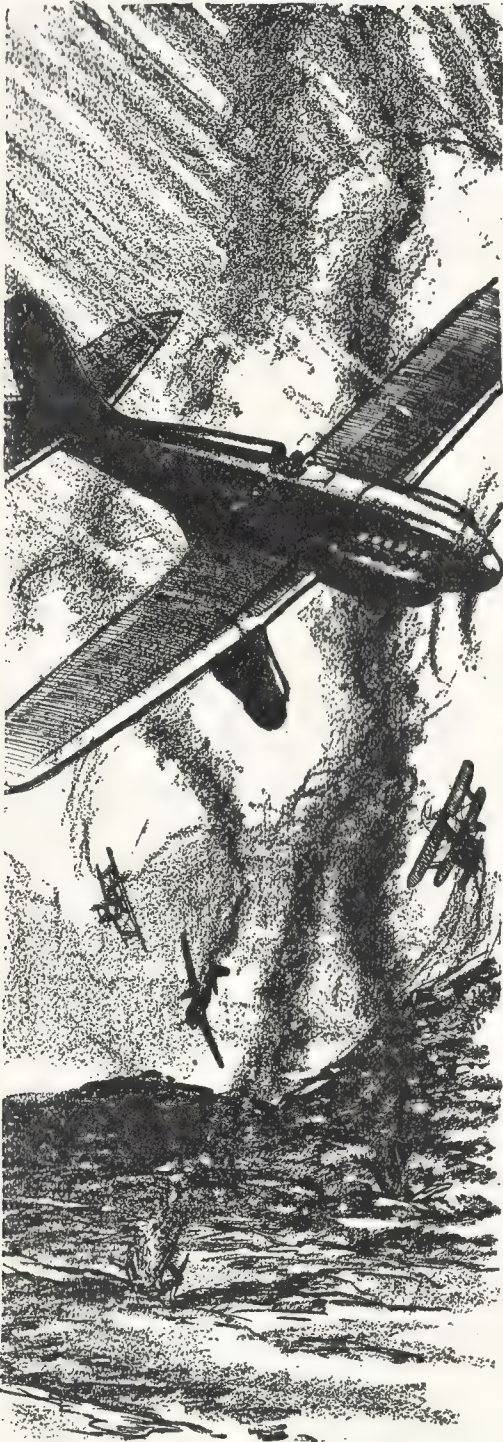
"A skilful turn gave me the opportunity to put a burst of bullets straight into the enemy's cockpit. . . ."

DAVID

An Exciting Story of a British Aircraft Carrier in Action

By

**Lt.-Cmdr. M. O. W. MILLER,
R.N.**



"... The pilot fell forward over his controls and the monoplane turned and slipped into a spin"

knew, "The Scrubber" David Patrick Andrew St. George Parker became.

Through no fault of my own, I was fated to play a large part in the Scrubber's life, and my rôle began even before he joined the ship.

There has always been an impression that the dual control of the Fleet Air Arm by the Air Ministry and the Admiralty caused friction between naval and Air Force officers. This was not true, of course, because the relations between them were always of the best, and senior officers of aircraft carriers used to take a good deal of trouble to keep them good. One of the ideas that our commander in the "Tenacious" had was that, whenever a new R.A.F. officer arrived in Malta to join the ship, a naval officer should go and meet him.

There are two ways of going out to Malta. One is to go all the way by sea in a P. & O. liner, which takes about ten days, but is very comfortable. The other is to go across Europe by train and take a boat from Syracuse in Sicily, which is damned uncomfortable, but has the advantage that it only takes four days and so gives one an extra six days' leave at home. The Scrubber was sent out by train and arrived in Malta one Sunday evening in the "Queen of the Mediterranean" of glorious but rather irritating memory; glorious because she generally used to start one off on one's home leave, and irritating because she was full of bugs. Quite by chance, I was the naval officer selected to go and meet the Scrubber and, as I had been asked out to supper that night, I did not bless the unfortunate new arrival who made me cancel my party.

AIR STORIES

I WENT in one of the ship's boats and took a working party with me to collect his luggage. After a bumping match with the usual crowd of *dghaisas*, the Maltese version of the gondola, my boat managed to get alongside the "Queen" and I went aboard. At the top of the ladder, I saw what looked like a schoolboy of sixteen or so, and I brushed past him to go down to the saloon where I expected to find my man drinking a stirrup-cup to pull himself together after a rather rough and unpleasant crossing. There was no purser in that ship, like there is in a P. & O. boat, from whom I could make enquiries, so I had to search the ship myself for the new arrival. Deciding at last that he must either have missed a train somewhere on the journey or else have taken a *dghaisa* while I was down below, I was about to call my boat alongside when I saw the youngster still standing at the head of the gangway. He looked very lost and forlorn and was obviously very tired and suffering from the effects of a bad crossing. I went up to him and asked his name.

"David," he replied.

"David what, boy?" I asked. I thought that I might know his parents and be able to help him.

"David Patrick Andrew St. George Parker," he replied.

"Golly," I said, and nearly fell backwards down the gangway when I realised that this was my man. I had been told that the new arrival was straight out of the bag, or rather the F.T.S.,* but this man was still wet behind the ears. However, what he was like was no concern of mine, so I sent the working party to get his gear down into the boat and thanked my stars that the new arrival had been sent out to fill a vacancy in a fighter flight. I was an observer, so the merits of single-seater pilots were no great concern of mine.

Parker was quiet in the boat on the way across the harbour to the "Tenacious," but I could see that he was thrilled by the romance of it all. And

the Grand Harbour of Valetta is rather impressive when you first see it, particularly at night. The bastions of the forts stand out black against the sky and great warships loom up on every side, their bugles and shrill bosun's pipes calling their crews about their duties as they have done for hundreds of years. A thousand lights are reflected in the still waters of the creeks and the *dghaisas* glide noiselessly past, their silence broken only by an occasional flood of imprecations as some excited *dghaisa-man* avoids a collision.

We came alongside the carrier and I pushed him out of the boat and up the gangway on to the quarter-deck where a group of officers was standing. As he got to the top of the ladder, Parker halted, turned aft, took off his hat—he was wearing plain clothes, of course—and bowed. I suppose he had been taught, quite rightly, that whenever one steps on board a man-of-war, one must salute the quarter-deck. But this ceremoniousness was a bit too much for the spectators, who burst into guffaws of laughter as I, blushing, bundled my charge into the half-deck before he committed any more solecisms.

I took him down to his cabin, made his servant bring him some hot water, and told him to clean himself while I returned to the quarter-deck to see about his luggage.

"Who the devil's that?" asked Puggy Lawrence, commander of the fighter flight as I rejoined the group of officers on deck.

"That's David Patrick Andrew St. George Parker, your new pilot officer," I replied.

"My God," said Puggy. "What have I done to deserve that? He looks as wet as a scrubber!"

And since the name fitted, it stuck.

CHAPTER II

David Scores a "D"

WE went to sea to do flying exercises the next day. My own machine had had a difference of opinion with the

* F.T.S. : Flying Training School.

"D's" FOR DAVID

palisades a couple of days previously and so, as I had nothing to do, I was sent up as officer of the watch on the bridge for the forenoon.

It is a pleasant enough job, if slightly boring. All you have to do is to see that the ship doesn't bump into anything and to keep her head into wind when flying operations are in progress. You have to keep her pretty accurately into the wind, but there is a broad white line painted down the middle of the flight deck and a steam jet comes out of a hole in the foremost end of it. You just keep the steam flowing down the white line by altering course a degree or two whenever the jet strays from its straight and narrow path.

It doesn't do to allow a machine to land-on unless the wind is dead fore and aft because the deck is only a hundred feet wide, and the slightest amount of drift will take her into the palisades, great steel channel-bars sticking out at an angle of 45 degrees with three-inch wire netting in between to catch any machine which may try to go over the side. They save the pilot from a ducking all right, but the machine is not much good after being caught in them.

The best part of being officer of the watch is that you get a "goof" in perfect safety instead of having to stand near the "island" and take your chance of being written-off by a machine that tries to fly into the superstructure. And, as the Scrubber was to do his first deck-landings that morning, I was quite pleased to be told off for the duty.

We started the day, as usual, by sending the III. F's off on a navigation exercise, followed by the Ripons which took-off to practise dummy torpedo attacks. Having cleared them out of the way for three or four hours, a Nimrod was brought up on the lift together with all the "goofers," that is everybody who could find an excuse to leave his job in order to watch the new pilot do his practice landings. It is a cruel pastime and one calculated to give any new pilot the jitters, but the spirit that made people watch the gladiatorial combats of old still lives on.

The Scrubber came up to the bridge and reported to the Wing Commander for orders while his machine was being run up.

"The usual stuff," said Wings, "Make three approaches and then, if you see the 'Affirmative' go up, you can try a landing. I'll give you plenty of wind speed over the deck so don't come on too fast. Don't forget that if you look like scoring a 'D,' it's safest to switch on again and go round and have another shot."

"Aye, aye, sir!" said the Scrubber, saluting smartly.

It's a curious thing that words which from one man sound perfectly correct will give you quite a shock if someone else uses them. I suppose a naval pilot and an Air Force one, when dressed in Sidcot suits and flying helmets, look exactly the same, yet if the naval man replies, "Very good, sir!" or the airman, "Aye, aye!" when given orders, both replies sound equally incongruous.

As the Scrubber turned to climb down the ladders to the flight deck, the Captain turned to me:

"You'd better break him of that, Densham," he said, and I realised, with a shock, that, through the mere accident of my having been selected to meet him, I seemed to have been placed in *loco-parentis* to our infant phenomenon.

THE Scrubber got into his machine and tested the controls. I turned the ship into wind and worked up her speed. As soon as the indicator showed that the wind speed over the deck was correct, Wings waved his flags. The signal was seen by the flight lieutenant in charge of the flight deck, who waved away the chocks which were preventing the machine from being blown backwards, and put up a little white flag as a signal to the pilot to take-off.

The aircraftmen lying flat on the deck pulled away their chocks, the Scrubber opened up his engine, flashed past the bridge in level flight, and before he was two hundred yards ahead of the ship, did a flick roll.

AIR STORIES

As he was still level with the flight deck and so only about seventy feet above the water, the Scrubber's flying debut was, to say the least of it, unpropitious. And when, as he followed his flick roll up by a series of loops and rolls carried out at a height of about five hundred feet, I could see a look on Wings' face that boded ill for the youngster when he returned on board.

The signal to begin his practice approaches went up while the Scrubber was in the middle of his exhibition and, anticipating the worst, I had the sea-boat manned ready to pick him up if he went over the side into the drink.

The Scrubber did three almost perfect approaches, and then the Affirmative went up to tell him to do a landing. He saw it as he flew forward past the bridge, pivoted round on his port wing-tip and, doing a stall turn as he came abreast the after end of the flight deck, found himself dropping astern of the fast-moving deck. At once, he opened up his engine to recover speed and found himself on the deck before he had time to throttle back again. As he rushed past the bridge, we prayed that he would have enough sense to give her the gun and go round again, but he evidently had no such intention, and ended up with a dozen sailors hanging on to his tail and the nose of his machine looking over the for'rard edge of the flight deck on to the fo'c'sle thirty feet below. He had scored as perfect a "D" as I have ever seen.

The forward end of the flight deck is curved and, with the wind-shield lying flat across the deck just abaft it,* makes an almost perfect letter "D" with the curve pointing forward. Going over the edge of that curve involves you either in a ducking, if you go over the side, or a thirty foot drop if you go over the front end of it on to the fo'c'sle. Hence, "scoring a D" as it is called, is not a pastime to be recommended because, sooner or later, you are bound to go over the edge, however much the flight deck party may endanger their lives by flinging themselves on your tail as you flash past. In any case, it is bad for the

nerves of the senior officers watching you from the bridge, and still worse for those of your observer if you happen to be flying a two-seater.

The Scrubber did six deck landings that day and scored six "D's." He would probably have scored more if we hadn't had to fold him up and put him down below to get our reconnaissance machines and torpedo-bombers on board.

THE Scrubber's life as a single-seater pilot was eventful, but fated not to last for long. I never quite understood him. No one did for that matter. He was very quiet in the wardroom and rather kept apart from everybody else. I used to do my best to talk to him, but he was so meek and mild as to be positively uninteresting. Yet, put him up in the air in his Nimrod and there was no holding him.

I never found out whether it was that he deliberately disobeyed orders or whether he just got so excited in the air that he forgot, but nothing could keep him from low stunting, and nothing could prevent him landing on so fast that he ran straight on to the "D." Wings became so worried about him in the end that every time the Scrubber was going to fly he made him go up to the bridge and sign a declaration to the effect that he would carry out no stunts at a height of less than two thousand feet. Then, immediately after signing the paper, the Scrubber would take-off and do a roll before he was two hundred yards ahead of the ship.

It was obvious that this sort of thing could not go on, but I got rather a shock when I found that I had been selected to put a stop to it.

The trouble with single-seaters at sea is that they cannot go out of sight of the carrier. There's no "flying by Bradshaw"* at sea and no signposts in the way of woods and rivers to lead you back to your home which, in any case, has probably moved about sixty

* i.e., following railway lines and checking one's position by reading the names on station platforms.—EDITOR'S NOTE.

"D's" FOR DAVID

miles away from where you left it by the time you want to get back. Nor can there be any forced landings. You have to fly by dead-reckoning the whole way and, of course, a single-seater pilot can't go fooling about with a chart and dividers in mid-air. So, when the two-seater Ospreys were introduced into the Fleet Air Arm, it was decided to attach one to each fighter flight and put an observer into it to act as navigator.

The Scrubber had been particularly obstreperous about this time, and someone had the brainwave of giving him an Osprey with an observer in the back-seat to keep him under control. I did not give three hearty cheers when I found that I had been selected as that observer.

"Scrubber," I said to him, "Just try and remember that you've got a valuable life in your hands now, mine; so try to curb your transports a bit. And if you score a 'D' again with me on board, I'll ring your ruddy little neck for you!"

"Yes, sir," he replied. "I'll try not to, but somehow, as I get abreast the after end of the ship, I always feel as if I'm going to miss her if I don't turn immediately and land-on."

"Never you mind about missing her," I said, "You can go so far astern that you lose sight of her completely if you want to. I'll navigate you back. But if you land off a stall turn again, God help you! By the way, can you steer a course?"

Steering a steady course and keeping a steady speed are pretty important at sea where an error of two or three miles in a three hundred miles' run might make you miss your carrier altogether on your return, if the visibility is poor.

"I think so," he replied.

And he could, too. He took me up that very afternoon and showed me. For three hours, we careered round the skies while I checked his courses and speeds every two or three minutes. I never caught him more than a degree or a knot out and, after steering a dozen courses, we arrived back within half a mile of the ship.

I FOUND out a good deal about the Scrubber during the next three months I spent as his observer. For one thing, I found that, though he was only just nineteen, he had a mind of his own and was not a bit impressed by the weight of gold lace on my sleeve. I discovered that the first time I tried to fly through a thunderstorm with him.

We had taken-off on a navigation exercise, and about twenty minutes after we had left the ship, we ran into as nasty a thunderstorm as I have ever seen.

"Do you think we ought to go on, sir?" inquired the Scrubber down the voice-pipe.

I was busy navigating at the time and rather annoyed at being interrupted.

"Of course we ought," I snapped back. "What's the matter with a thunderstorm? Are you frightened of it? I tested the bonding yesterday, so we're quite safe from lightning. Get on with it."

"Well, I don't like it," he replied and, before I could stop him, he had turned the machine round and was headed back for the ship.

That put me in my place all right—in the back seat where I ought to have been and not in front where, owing to the Scrubber's youth and reputation for wetness, I had been trying to be.

I began to study the Scrubber after that and I decided that his only troubles were his youth, which was hardly his fault, and his romantic mind, which was a disease.

It was about this time that he confided to me that it was his ambition to be known by his Christian name, and he seemed to have some idea that his reputation for low stunting would contribute towards this end. I told him that my ambition was for him to land me on the deck without scoring a "D." All the same, I was beginning to develop a respect for him, and we came to an agreement that I would let him know as soon as I had finished my navigating each time we flew and that he would then be at liberty, after giving me a few minutes to secure myself and my gear,

AIR STORIES

to throw the machine about as much as he liked before landing on deck.

CHAPTER III

Sailing Orders

THE Mediterranean is not, normally, a particularly exciting station, but every now and then a bit of excitement turns up to relieve the monotony. After I had been flying with the Scrubber for about three months and was getting just about fed up with him and his damned hairbreadth escapes from going over the bows of the flight deck, I felt that we were about due for another flap, and sure enough it turned up.

It was a boiling hot summer's afternoon and I had just got up and dressed after an afternoon's caulk in my stuffy cabin. I had to keep the first dog-watch, and the prospect of walking up and down the quarter-deck doing nothing for two hours was not very inspiring. I walked into the wardroom and, flinging my watchkeeping impedimenta on to a settee, picked up a paper to take into tea with me. As I turned to go out, the Scrubber walked into the room.

"Hullo, Scrubber," I said, "What are you doing here?"

When the ship was at Malta, we used to land our flights at the shore aerodrome, and it was exceptional to see a pilot on board.

"Oh, I came in with my flight sergeant to take out some more stores. We're just off again."

"Lucky dog! Thank your lucky stars, young Scrubber, that you're in the Air Force and don't have to do any watchkeeping!"

"Yes, sir," said the Scrubber dutifully. "But you won't have to do any more watchkeeping for some time, will you?"

"What d'you mean 'won't have to do any more watchkeeping for some time?'" I demanded.

"Well, we'll be on active service soon, and then the ship's officers do all the watchkeeping, don't they?"

"What buzz have you been listening to now, you chump?" was my retort.

"Well, sir," he replied, "My flight sergeant tells me that the Chief Yeoman of Signals told him..."

"Enough, Scrubber! As George Robey would say, 'Desist!' If you've started listening to lower deck buzzes, before you know where you are you'll believe that we've been told off to carry out a raid on the moon!"

I was angry with the boy for arousing my hopes in vain, and, picking up my paper, I walked in to tea.

But the Scrubber was right. Lower deck buzzes sometimes are right. Before I had been on watch half an hour, the signalman came running down to me with a signal from the C-in-C ordering us to embark our flights at dawn the next morning and sail for Palestine "with the utmost despatch."

The Navy is used to setting out for the ends of the earth at half an hour's warning and, since it carries its home round with it, short notice doesn't bother it very much. The Air Force is less fortunate, and I should not care to have been with the flights ashore that night, struggling to pack up all their gear into lorries in the dark and get their aeroplanes serviceable at the same time.

Their lorries arrived alongside the ship at 4 a.m. and, an hour later, after unloading them, we slipped from the jetty and proceeded to sea where the flights were flying around, waiting for us. Within half an hour we had embarked forty-two machines and Puggy Lawrence took me by the arm just as the men pulled the Scrubber out of the "D"—we were getting used to him by now, and he was always made to land on last so that the other machines would not have to wait while we collected the bits, as we were bound to have to do sooner or later. Puggy led me to the Observers' Office where we could have a quiet talk over a cup of cocoa.

"What the hell's all this flap about?" he began, "We know nothing except that we were told to pack up and embark at dawn. It might have made us a bit

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"The Osprey dived straight at the rock and I released the bomb from about fifty feet. . . ."

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more cheerful if they had told us what all the fuss was about."

"I don't think we know too much about it ourselves, at present," I replied, "But as far as I can gather, there seems to be about seven different sorts of hell let loose in Palestine."

"By that, I suppose you mean that a couple of Arabs have knocked another Jew on the head," said Puggy sarcastically. "Or t'other way round. Those chaps seem to spend most of their time cracking each other on the head. But why the devil can't the local R.A.F. deal with it?"

"Shame on you, Puggy!" I cried, "You an R.A.F. officer swearing at your own!"

"To blazes with that!" retorted Puggy. "When I'm ashore I'm R.A.F. and when I'm in an aircraft-carrier, I'm Fleet Air Arm. But what's it all about, anyway?"

"Well, it's a bit more complicated than local rioting this time," I replied, "As far as I can gather, pretty serious rioting has broken out all over Palestine and trouble has started simultaneously in Transjordan and Egypt."

"Phew," said Puggy with a whistle, "No wonder the local R.A.F. can't deal with it by themselves."

"That's right! We've been sent for to give them a hand. Wings and the Senior Observer are in with the Owner now, working out the patrols."

CHAPTER IV

Mystery of the Nimrods

THE old "Tenacious" could slip along pretty usefully when she was put to it, and it took us only two days to do the 1,200 miles from Malta to the Palestine coast. They were fairly busy days for us, too, and most of our time was spent in tuning up the machines and checking gunsights on targets rigged up on the flight deck.

The night before we arrived off the coast, the Owner called all the pilots and observers to his cabin to give them

their orders and tell them all that was known about the situation.

"I expect you know roughly what all this is about," he said when we were assembled. "We've got practically the whole of Palestine to patrol. Luckily, we have no enemy up against us in the air, and our main job is to discover and report any concentrations of tribesmen in the hills and, of course, to break them up by air action. The flights will work in pairs, one flight relieving the other, during daylight hours. Each pair will be given an area which they will patrol, the machines working singly so as to cover the whole of it as the areas are pretty big. In each area, a fighter flight will work with a Ripon or III F flight, one relieving the other, so that there will always be a flight of fighters either in an area or else on board ready to proceed to it in case of necessity. The flight operating in the southern area will leave one machine to watch the coast. Is that all clear? Any queries? All right. Flight commanders remain behind to get their areas. Remainder, carry on."

IT was the first spot of active service that most of us had had, and it was a pretty tense crew that gathered round Puggy Lawrence for our final orders next morning.

"Here you are, chaps," he said, unfolding the chart. "Make a note of your areas, and if you see anything that looks like a lot of tribesmen gathering together, you are at complete liberty to shoot 'em up! We've drawn the southern area and, Blakeney, you can take the coast patrol as you're second in command. You can fly right down the coast to Sinai if you have time, but you must search the coastal hills as well. And for goodness sake don't turn round so late that you run out of petrol before you can get back! We all meet at Ras el Arish—that's this cape here—three and a half hours after we break formation over it to go to our areas. And we wait for nobody. If you're not there, Densham will lead us back to the ship without you. We'll only just have

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enough juice to get back to the ship as it is, and I'm not going to lead the whole of my flight into the sea just because some silly ass can't get back to the rendezvous in time ! All set ? Righto ! Off to your machines ! "

As we climbed into our cockpits, the great carrier was turned into the wind and, taking-off, the flight formed up behind the Scrubber and myself and we led them off to our area.

Over Ras el Arish, the flight broke formation as arranged, and the Scrubber and I flew along with Blakeney until the time came for us to turn inland to our area, leaving him to continue on his way down the coast.

If the Scrubber was to be believed, the tribesmen on those rugged hillsides beneath us when we first arrived in our area were as thick as the crowd at a Cup Final, but after we had shot up half a dozen bare rocks, he settled down and the rest of our patrol proceeded without incident.

Punctual to the minute, I arrived over Ras el Arish, three and a half hours after we had broken up our formation. But although five of our machines had turned up, there was still one missing.

"Scrubber," I shouted down the voice-pipe, "do you know who's missing ? "

"Yes," he shouted back. "Blakeney. He was the chap who had the coast patrol."

"Oh, well," I said, "I suppose he's misjudged the time a bit. How much petrol have you got left ? "

"Only about forty minutes on our reserve tanks."

"Hell ! We must be off. Fly up alongside Puggy," I said.

We came close alongside the flight commander, and I could see that he agreed with me that we could not wait any longer, and that Blakeney would have to take his chance.

I FORGOT about Blakeney during the next half hour. Returning to one's carrier is always anxious work for an observer, but when the "Tenacious" was safely underneath us again, I had

a look round. But there was still no sign of our missing machine.

"Did anyone see Blakeney after we broke up ? " asked Puggy when we had hauled the Scrubber out of the "D" again and I had returned to the Observers' Office.

"I saw him careering off down the coast," I replied. "Flying at about five hundred feet. But whatever's happened to him, he's down by now. His petrol must have run out quarter of an hour ago."

"He's probably down on the beach somewhere," said Puggy hopefully. "We'll signal the Ripons to keep a look-out for him."

But when, three hours later, we gathered in the office again, preparatory to relieving the Ripons, there was still no news of Blakeney, and we had to take the air one man short.

"Worrall," said Puggy, to the next senior pilot, "you take the coast patrol this time and we'll all increase our areas. Keep an eye open for young Blakeney. And don't forget to turn back in plenty of time. I don't want another of my machines in the drink ! "

That second patrol was much the same as the first one. In fact, it was a bit too much like our previous one, because when we foregathered over Ras el Arish to return to the ship our coast patrol machine was missing again. Nor did the Ripons, in the last patrol of the day, see any signs of either of our lost machines.

We were a sadly depleted flight when we gathered in the Captain's cabin that night to report on our experiences of the day and to receive our orders for the next morning.

After receiving all our reports, the Captain turned to the Wing Commander.

"Well, Wing Commander," he said, "since no one has seen any signs of enemy activity, I think we'll carry on sending the machines on their patrols singly again to-morrow. Do you agree ? Right. Now what about Lawrence's missing machines ? Got any ideas, Lawrence ? "

"None at all, sir. They've both

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recently done an overhaul and their engines and airframes ought to have been all right. In any case, I can't believe that they would both have given out, and both on the same patrol too! At least, it's an amazing coincidence if that is what's really happened!"

"What exactly were your orders to them?" chipped in Wings.

"To go as far down the coast as they could and then turn back in time to reach Ras el Arish three and a half hours after we broke formation," replied Puggy.

"Were they to keep strictly to the coast all the time?" asked the Skipper.

"The coast and the coastal hills. But Wilson says he searched the hills thoroughly in his Ripon and saw no signs of wreckage anywhere. Not even a patch of oil in the sea."

"Looks to me as if they must have flown into the sea, all the same," said the Skipper. "After all, if there had been any trouble, why only the two Nimrods? Why weren't the Ripons brought down as well? They're much slower machines and a much easier target, yet they weren't even shot at. Seems to me as though either misjudgment of the time to turn back or else engine failure was the reason—neither of them very creditable to your flight, Lawrence."

CHAPTER V

The Coast Patrol

IT was a very worried flight that I assembled in the Observers' Office next morning to drink some ship's cocoa and get its orders before taking-off, and Puggy voiced all our thoughts when he broke out bitterly:

"There seems to be something the matter with our damned 'buses! Two machines lost through engine failure in a single day! It's a bit over the odds, I must say."

"But are you sure that they were lost from engine failure?" asked the Scrubber.

"Well, what the hell else was it?"

snapped Puggy, who always found difficulty in keeping his patience with young Parker. "And you, young feller-melad, we'll lose you too if you don't look out. Your D-scoring amused me when we were just playing about, but it won't do now that we're on active service. Just see that it doesn't happen again."

I saw the Scrubber's face fall. He was a sensitive youngster, and I knew that his bad landings were the result of trying too hard. After all, when you've been trained on a ground aerodrome, it does take a bit of getting used to one that is running away from you at thirty miles an hour.

"But you know, Puggy," I chipped in, "there are other possibilities, in spite of what the Owner said last night. Enemy action, for one."

"Enemy action, my foot!" Puggy retorted, "Blakeney and Worrall came down in the sea. If they'd come down on land, the Ripons would have seen something. You don't think these tribesmen have been building a navy, do you?"

"Perhaps the Ripons didn't search very thoroughly," I suggested.

"You'd better tell Thornton that, he's their flight commander! And he won't say thank you!"

"But if you come to think of it," I persisted, "the Ripons cruise at about ninety knots, whereas Blakeney and Worrall must have been flying at about a hundred and forty. It stands to reason that the Nimrods went a good deal farther, though, of course, we don't quite know in what direction. And whatever happened to them, might have happened at the far end of their patrol."

"There's something in that, Densham. Anyway, you and the Scrubber had better take that coast patrol this morning. And see that you do your navigating properly and turn back in time! I'm not going to have any more of this nonsense! And don't forget, young Scrubber, if you score a 'D' again, I'll have you court-martialled. If you find Blakeney and Worrall, of course," he added cruelly, "I'll see that everybody in the blasted world calls you David, or whatever it is you want to be called,

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since that seems to be at the bottom of most of your eccentricities in the air!"

The Scrubber flushed up and I took him by the arm and led him out to our machine. He was a queer lad, but I was beginning to like him. Besides, it was I who had split on his confidences, and he hadn't known that his secret ambition had been discovered.

We led the flight to our usual starting point over Ras el Arish and then headed south on our coastline patrol, keeping our eyes skinned for any signs of our machines. I didn't expect to find any until we got well south because the Ripons had carried out a pretty thorough search as far as they had gone, but when we came to the point where I had calculated that they must have turned back, we redoubled our watchfulness.

But we saw no signs of our two missing machines, and I decided that it was time for us to turn back. I wasn't going to be caught out through running short of petrol on the way home.

"Scrubber," I called out, lifting the voice-pipe to my mouth, "About turn. Time to go home."

"What's that down there?" he shouted back.

I looked along his pointing arm. Ahead of us was a small headland sheltering a bay on the far side. As we reached it, I could just make out a small steamer lying alongside a jetty.

"It's only a tramp steamer unloading," I replied.

"Would you like to go and have a look at it?" asked the Scrubber.

"No thanks," I replied, "I've seen ships before. This isn't Southampton Water and there'll be no lovelies to wave at! Besides, it's high time we made for home, unless you want a swim."

"Righto," said the Scrubber, turning the machine northward. "Home it is."

"ANY luck?" asked Puggy as we climbed up to the bridge to make our reports on our return to the ship.

"Nary a thing. Total bag, one tramp steamer, and she didn't look very exciting."

"Where did you see her?" he asked.

"She was alongside a jetty in a bay just beyond Hafiz Point, or Ras el Hafiz, or whatever they call capes in this part of the world. It was high time we turned for home—we'd been flying over the hills a bit—so we didn't go beyond the point. Why?"

"Oh, I just thought that she might have had some news of our missing machines if she's been there some time. She might have seen them pass overhead and not come back, or something of that sort."

"Well, I can fly straight there this afternoon instead of playing about in the hills, if you like. That'll give us time to fly round her and call her up with the Aldis lamp."

"Righto," Puggy agreed, "I wish you would."

CHAPTER VI

The Secret Squadron

WE took-off after lunch to relieve the Ripons, and the Scrubber and I made straight for Hafiz Point and our tramp steamer. We saw her as we crossed the high ground round the point. She seemed to be the usual type of Mediterranean cargo boat, and was lying in a small bay, unloading alongside a roughly-constructed jetty.

The Scrubber flew round her for a while at a height of about three hundred feet while I tried to get her to answer my flashing lamp. She was unloading large wooden crates into lorries drawn up alongside, and I was rather surprised that she didn't send an officer up to the bridge to reply to my signals. She was flying the Red Ensign, and British tramps are for the most part, nowadays, supplied with lamps for signalling to aircraft, and their officers are usually rather keen to have some practice. But, although some of her crew waved to us, we could get no other answer out of her, so, after flying round for about forty minutes, the Scrubber and I decided it was time to return home.

The Scrubber turned north and, after climbing to two thousand feet to give

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himself time to think if the engine started misbehaving itself, settled down to the rather boring trip back to Ras el Arish to pick up the rest of the flight and take them home.

I bent down to my chart to check off the distance back and, even as I did so, things started to happen.

Tacca, tacca, tacca . . .

Bullets zipped past my head, tearing great fids of fabric out of the wings. I was so surprised that it took me a second or two to realise what was happening, and when I woke up and jerked round, I saw four of the wickedest-looking monoplanes I have ever seen. They were just appearing out of the afternoon sun, flying in formation about a mile away and about a thousand feet above us. Closer up, another of the same breed, which had apparently outstripped its fellows, was turning below us after delivering its vicious attack.

So far as we knew, the only aircraft within a thousand miles of us were British, and they ought to have recognised us with our tails and targets and the "Tenacious" green band round our fuselage. Anyway, British or not, these customers evidently didn't like us, and I jumped to my gun and jammed a drum of ammunition on to the spindle as they put their noses down and swooped down to complete the work their comrade had started.

I drew a bead on the leading machine as he dived at us, but the Scrubber, bless him, had seen the only way out of the situation. Left to himself, I have no doubt that the romantic young fool would have taken on all five of the enemy single-handed, but, having someone else to look out for, he decided that discretion was the better part of valour. Putting his nose down, he dived to within about six feet of the surface of the water and started to streak northward, twisting and turning like a snipe to avoid becoming a target for bombs.

Seeing that they could not attack us, and probably thinking that they were being led into a trap, the monoplanes abandoned the chase and I watched them curiously as they circled round

over the bay where we had just left the cargo boat, and then headed inland. I wondered if Blakeney and Worrall had got as far south as that bay. If they had, there was plenty of reason why they had failed to come back.

WE found the rest of the flight waiting for us at el Arish, and the look on Puggy Lawrence's face as he spotted our bullet-riddled wings was worth seeing. But there was no time to lose, so we waved to him and headed for the ship.

As soon as we had arrived on board, we rushed up to the Captain to tell him our story.

"Where did you sight that steamer?" he asked.

"In a bay just beyond Hafiz Point. You can hardly see it on our flying chart, but the navigator's large-scale chart will probably give it, sir. There's a pier in the middle of it for unloading cargo."

We went into the chart-house and the Pilot got out his large-scale chart.

"Have you got it corrected up to date, Pilot?" asked the Skipper, "Because I don't see any pier marked."

"Yes, sir. Right up to the last Notice to Mariners. And as it's British territory, whoever built that pier must have given notice to the authorities before he started building, so that it could be shown on the charts."

"That's all right if it *was* built by the British," said the Skipper. "What sort of pier was it exactly?" he asked, turning to us.

"Now I come to think of it, sir, it was a pretty rough one. We flew fairly low once or twice, and it looked to me at times as if it was swaying under those lorries. It was more like a wooden jetty than a proper pier."

"Large wooden crates they were unloading, did you say?" chipped in Wings. "Ever seen an aeroplane being transported by sea? Did they look anything like that?"

"Damn!" said the Skipper. "Why didn't we think of that before? The whole thing's as plain as a pikestaff! Don't you see? We knew these troubles

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were being helped from outside, but we never thought that anyone would help them by lending aircraft! But what could be easier than to land aircraft from a ship at a deserted part of the coast, and assemble them ashore? They knew that the R.A.F. would be fully employed in helping the Army inland and that the troubles elsewhere would prevent the R.A.F. sending reinforcements in the usual way. I suppose they forgot about us. Well, they're going to find out their mistake."

"That's right, sir! The one thing these tribesmen need to put heart into them is a few aircraft. I suppose they've been assembling them ashore and waiting till they were all ready before they took the field. Poor Blakeney and Worrall must have sighted that steamer, gone down to investigate and been shot down for their curiosity."

"It's no use crying over Worrall and Blakeney," said the Skipper. "What we've got to do now is to stop this nonsense before it goes any farther. Messenger, tell the Commander and the Major of Marines I want them. Those chaps have obviously set up some sort of aerodrome ashore and we'll have to send a landing party to destroy it."

"We can do that, sir!" offered Wings.

"Yes, I know you can, Wing Commander, but we've got to send someone ashore to mop up the remains after you've finished. What I'm proposing to do is recall all the flights from patrol and send the bombers off to destroy the ship while the fighters deal with the aeroplanes. Then I'll land the Marines at night to finish off the good work. There's nothing like doing a job well. Chief Yeoman, send off a signal recalling all flights!"

CHAPTER VII

Flight of Vengeance

GRADUALLY, the patrol flights found their way back to the ship, and the "Tenacious" turned angrily from her course to land them on as she rushed

southward on her mission of vengeance. As soon as all the machines were on board and stowed, the lifts started bringing them up from the hangars again, and they were ranged on deck while the armourers fitted the bombs and the riggers and fitters gave last minute touches to the machines.

While the engines were being run up, the pilots and observers gathered in the Observers' Office to receive their instructions from the Wing Commander. As soon as he had finished giving detailed orders as to the objectives and the timing of the coming attacks, he made way for the Senior Observer, who described the movements the carrier would make while the aircraft were away.

When he had finished, the Captain, who had been standing listening, cleared his throat.

"You all know what you've got to do?" he said.

"Yes, sir," answered a chorus of voices.

"Well, go and do it," he finished and, turning on his heel, he walked out of the room and up to the bridge to get on with his part of it.

It wasn't much of a speech, but it had more effect than any heroics would have done. It was a determined body of men that made their way out to their aeroplanes.

The "Tenacious" turned into wind and, with a roar, the first machine opened up her engine and took the air, followed by the remainder as quickly as the flight deck party could wheel them on to the centre line.

The Scrubber and I took our places in Puggy Lawrence's formation as he headed for the bay. There was no need for us to lead now; everybody knew exactly where he had to go. Grimly, we flew down that bare and rocky coast, placing our ammunition drums handy and testing our guns as we went. Hafiz Point hove in sight, and we breathed a sigh of relief when we saw a flight of monoplanes circling over the hills ahead of us. I think our only fear had been that the enemy would be hiding in their

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lair in the hills, or wherever it was, and would not come out to accept our challenge.

Puggy waved to his flight and, pulling up the nose of his machine, climbed steadily, all the while circling well out to sea in order to get south of the enemy and come at him out of the afternoon sun. Away to seaward of us were the bombers, waiting for us to deal with the enemy fighters and so leave the way clear for them to bomb the steamer and then go on to locate and destroy the aerodrome.

As soon as he had reached his desired position, Puggy waved his hand and, with engines screaming, we followed him down into the fight.

WHATEVER may have been his shortcomings as a deck-landing pilot, the Scrubber was all there when it came to a scrap, and the way he banked round in a climbing turn so as to give me a chance every time he came out of a dive was masterly. Those monoplanes got the shock of their lives when we came diving at them out of the sun, but they showed no lack of skill and courage when they woke up to their danger. Time and again we dived on them and saw their pilots flick their machines over at the last minute, dodging death by inches. Glancing round, I could see the Nimrods hammering away, and I gave a cheer as I saw one of the enemy crumple up and fall to its doom under Puggy's merciless attack.

By this time, all formation had been lost, and the Scrubber and I were chasing an enemy who was making off inland. Climbing and twisting, the Scrubber dived on the monoplane again and again, and I forgave him all his "wetness" as a skilful turn of his gave me the opportunity to put a burst of bullets straight into the enemy's cockpit. The bullets found their mark for, before I had taken my finger off the trigger, I saw the pilot fall forward over his controls and the machine gradually turn over on one wing and slip into a spin.

We turned round to look for the other monoplanes and saw that they had been dealt with faithfully by the Nimrods.

Of the five machines we had sighted, only one now remained in the air, and we could see the burning remains of the others smoking on the hillsides.

"What do you want to do next, Scrubber?" I called down the voice-pipe.

"What's that on the beach?" he called back, "I'm going down to have a look at it."

With a jerk that nearly threw me off my feet, he twisted the machine round and dived down towards the inshore end of the jetty. Looking down at the spot at which we were diving, I saw a khaki-clad figure running and, as I watched, I saw bullets start to scatter the sand at the feet of the running man from a machine-gun placed at the end of the pier.

The Scrubber dived down to within a few feet of the ground. We recognised the running man simultaneously.

"My God!" cried the Scrubber. "It's Blakeney! He must have been shot down over the land and taken prisoner."

"Well, he won't be a prisoner for long," I shouted back, "that machine-gun's going to get him in a minute!"

"No, it's not!" shouted the Scrubber. "He's making for those rocks, and if he gets there he'll be all right."

"The hell he will!" I replied. "Not unless he manages to keep out of the way until our leather-necks land tonight!"

"Yes, he will," shouted the Scrubber. "Stand by with your gun. I'm going to dive on that machine-gun."

We rushed screaming down to the attack and, as the Scrubber banked to give me a shot, I saw that his own burst had done good work. Two of the gun's crew lay writhing on the ground. The remainder picked up their gun and ran for the shelter of the rocks, chased by bursts of fire from the Scrubber and myself.

"Scrubber," I called out, "dive on the blighters and I'll see if I can hit their rock with a bomb."

The Scrubber climbed vertically and then circled round so as to give himself

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room to take aim with his machine. Putting her nose down, he dived straight at the rock, and I released the bomb from about fifty feet as he pulled out of his dive. Again and again we carried out the manoeuvre, but the enemy were too well sheltered behind their rock and were still untouched when my last bomb had exploded.

WE circled round to see what else we could do. There was too much dead ground round the enemy gun for our fire to have any effect, and they had only to wait until we had gone to shoot down poor Blakeney at their leisure.

"Look at the ship!" suddenly shouted the Scrubber.

I looked round and, to my horror, saw a body of armed men rushing down the gangway on to the jetty. At the same time, a gun's crew were uncovering a nest of machine-guns on the fo'c'sle with which to cover their landing party until it had reached the shelter of the rocks.

The Scrubber turned steeply.

"I'm going to land on the beach," he cried out, "Chuck your gun over the side to lighten us. We may be able to take-off with Blakeney. He's only a little 'un."

I managed to unship my gun before we got over the beach, and jettisoned it into the sea. The Scrubber heaved the machine round and, making a perfect cross-wind landing on the narrow strip of hard sand between the sea and the rocks, taxied up to the point where we had seen Blakeney disappear.

We saw our man come leaping over the rocks towards us, and as he climbed into the machine, a hail of bullets reached us both from the landing party which was now advancing along the beach and from the machine-gun which had now come into action again. The Scrubber opened up his engine and we staggered drunkenly into the air, followed by round after round of flying lead.

I stood up and looked into the Scrubber's cockpit. He had obviously been hit. I could see the hole made by a

bullet that had passed through one of the braces of his parachute harness. An ominous red stain was spreading under his shirt. The sooner we got back to the "Tenacious" the better. I could only just move in my cockpit, but I managed to get out my Bigsworth board and, making Blakeney hold it while I worked, I plotted out a course to intercept the carrier.

All the firing we had done, together with the jettisoning of my machine-gun, had played the very devil with our compasses, but I steadied the Scrubber on the best course I could and then turned to Blakeney. He had been shot down on the previous day, he told me, after he had flown round the steamer, and had been kept a prisoner on board her until, in the excitement caused by the air fighting, he had managed to jump over the side and swim to the shore. He had seen Worrall brought down in the sea when he, too, had shown curiosity about the cargo boat, and he had had to watch while the mono-planes bombed the wreckage so that it would leave no traces.

BY the time Blakeney had finished his story, the "Tenacious" hove in sight, and I stood up and leaned over the Scrubber. I could see at once that the lad was almost at the end of his tether.

"Keep it up, Scrubber!" I shouted to cheer him on. "No 'D's' this time, remember!"

The Scrubber turned well astern of the ship and flew towards her, gradually losing height. I was afraid that he was going to be too low, and that he would hit the stern of the flight deck, but at the last moment he realised what he was doing. Opening up his engine, he pulled the nose of his machine up in the air, closed the throttle and bounced high in the air over the end of the deck, coming down again amidships.

As soon as we had come to rest, I jumped out on to the lower wing and leaned over him.

"How's that?" asked the Scrubber

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weakly, and I could see that it was nearly the end.

"Fine!" I said. And then I remembered the Scrubber's great ambition. "That was great, David. Never seen a better deck landing in my life!"

David Patrick Andrew St. George Parker smiled as he closed his eyes for

the last time.

I climbed gingerly out of the machine on to the deck. I had to climb out carefully because the nose of the Osprey was sticking over the forward end of the flight deck, and I was afraid that the machine would overbalance on to the fo'c'sle, thirty feet below.

HERE'S THE ANSWER

Readers' Questions are invited and should be addressed to AIR STORIES, Tower House, Southampton Street, London, W.C.2. A stamped, addressed envelope must accompany ALL enquiries and no letter should contain more than three separate questions

VICKERS VANGUARD (V. Townley, East Cosham, Hants). The Vanguard was built in two forms, a commercial version carrying 20 passengers, and a military version for use as a heavy bomber. The military version was fitted with two Rolls-Royce Condors, giving it a top speed of 115 m.p.h. Climb to 5,000 feet took ten minutes.

ALBATROSS (H. Davison, Bridlington, E. Yorks.). The De Havilland Albatross transcontinental air-liner, a fleet of which has been ordered by Imperial Airways for their European services, is 71 feet 6 inches long, 19 feet 6 inches high, and its single wing spans 105 feet.

AVRO MANCHESTER (J. Varey, Blackburn, Lancs.). Two versions of the Avro Manchester night-bomber were produced in 1917-18, the Marks 1 and 2. Dimensions common to both were a span of 60 feet and a length of 37 feet. The Mark 1 was driven by two 320 h.p. A.B.C. Dragonfly engines, giving it a maximum speed of 128 m.p.h.; while the Mark 2, with two 300 h.p. Pumas, did 125 m.p.h., but carried a greater bomb load.

PARNALL PLOVER (C. G. Stacey, London, S.E.5). No, the Plover was not a Great War type; it first appeared in 1923. We have no record of a Fairey F.2; are you not confusing it with the War-time F.2a flying boat? And please note that a stamped addressed envelope must accompany all enquiries to this Department.

SIEMENS-STEFFEN (F. E. Trayner, London, E.7). The Siemens-Steffen R.1 was a double-fuselage bomber built for the German Air Service in 1918. It had a wing span of over 130 feet, and was a twin-engined tractor type with airscrews mounted some distance from the engines and driven through shafting. The lower fuselage carried the pilot, bomber officer, rear gunner and bomb load, while the upper fuselage carried a small gun-pit well forward and mounted two guns.

GULL-WING FIGHTER (N. Nugent, Clacton-on-Sea). The gull-winged Bristol single-seater fighter was the Type 133, produced in 1934. It was a low-wing cantilever monoplane of all-metal construction, with a retractile undercarriage and a supercharged Mercury engine. Only one, experimental model was ever built.

BRISTOL SCOUT (S. B. Baron, Stony Stratford, Bucks.). The Bristol Scout was a single-seater biplane built in 1914 and used until late in the following year. It was fitted with an 85 h.p. Le Rhône and could do about 100 m.p.h., all out.

AN ALVIS AERO-ENGINE (I. J. Rutherford, Ontario, Canada). (1) Yes, there is under development an Alvis aero-engine rated at 1,650 h.p. It is an 18-cylinder two-row air-cooled radial called the Alcides, weighs 1,645 lb. dry, and has a bore and stroke of 146 and 180 mm. respectively. (2) The fastest heavy bomber in use by the R.A.F. to-day is probably the Armstrong-Whitworth Whitley III, which does 215 m.p.h. The fastest medium-bomber is the Bristol Blenheim, which does 279 m.p.h. at 15,000 feet.

BIG MONEY (J. K. Arthur, Esher, Surrey). Approximate cost of one of the new Armstrong-Whitworth Ensign air-liners ordered by Imperial Airways is £52,000. A Short Empire-class flying-boat would set you back about £38,000. We've no idea what a Handley Page Harrow costs—despite the fact that, as taxpayers, we're helping to pay for them!

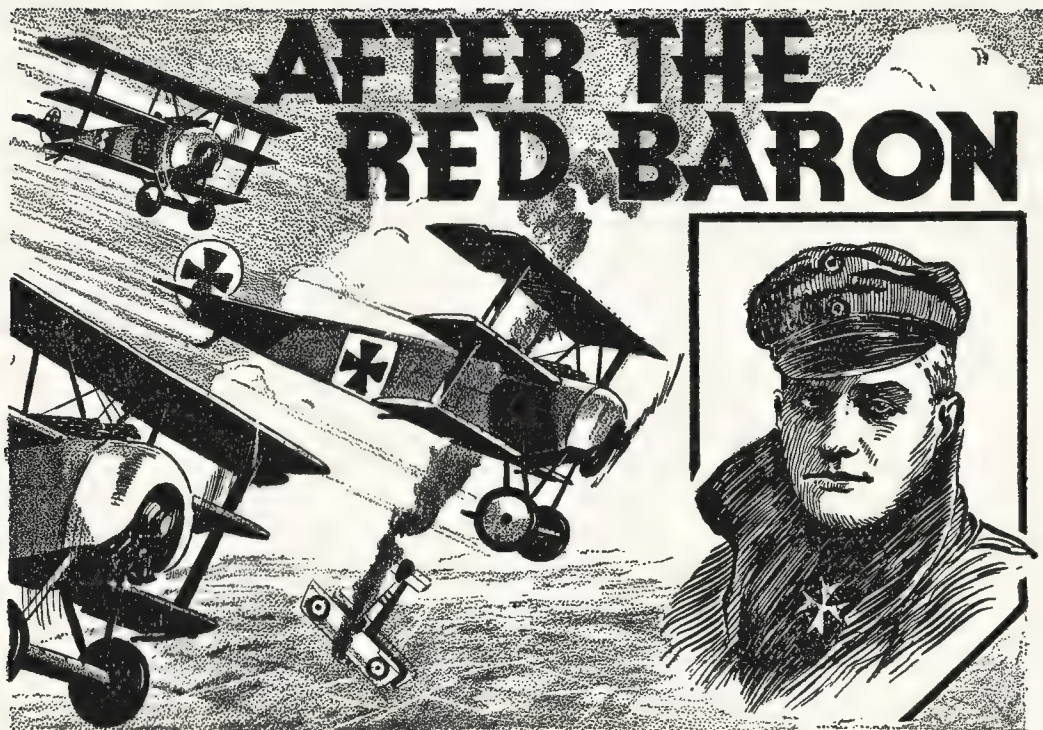
SOPWITH SCHNEIDER (K. Gowland, Woking, Surrey). The original Sopwith Schneider with a 100 h.p. Gnome engine was designed for the 1914 Schneider Trophy Race which it won for Great Britain at an average speed of 86.6 m.p.h. On the outbreak of the War, a number of machines of the same type were built and used by the R.N.A.S. as single-seater scout seaplanes.

WING FLUTTER (R. F. Smith, Finedon, Northants.). If you want to know exactly what wing flutter is, it is "an oscillation of the main planes, due to the interaction of aerodynamic and elastic forces upon the inertia of the structure." And now, if you'd like a definition you can understand, it may be described, roughly, as the violent vibration which is occasionally set up in the wings of an aircraft travelling at very high speed, owing to some structural or design defect. All clear?

SHORT EMPIRE (G. E. Chandler, Abingdon, Berks.). The Short Empire-type flying boat has a span of 114 feet, a length of 88 feet, and is 31 feet 10 inches high. It should make a fine model, and we wish you every success.

D.H. DORMOUSE (D. A. S. McKay, London, S.E.23). The De Havilland Dormouse, or D.H. 42, was a two-seater fighter biplane produced in 1924 and fitted with a Jaguar engine. Only one example of the type was ever built, as it was an experimental job for which an R.A.F. order was anticipated, but not realised.

(More Replies to Readers on page 187.)



The Eventful Story of the Dreaded Richthofen "Circus," Before and After the Death of its Most Famous Leader

By JOHN HOOK

THE air above Wervick on July 6th, 1917, resounded to the rattle of machine-guns as a *staffel* of eight Fokker triplanes, led by Manfred von Richthofen, sought to come to grips with eight F.E. two-seaters of the Royal Flying Corps.

Ground officers who had been watching the triplanes trying to break the "merry-go-round" tactics of the F.E.'s for nearly a quarter of an hour, suddenly saw one Fokker go into a dive. It was an all red triplane, and the watchers held their breath as the German 'plane continued its uncontrolled descent to earth. Less than six hundred feet from the ground, the triplane flattened out, flew erratically for a few moments and then landed.

Through their telescopes, the distant watchers saw a figure climb from the cockpit and fall to the ground. Men from a

nearby camp hurried to the machine and found Richthofen lying with his head resting on his helmet and with an ugly wound at the back of his skull. He was conscious and asked for cognac, which revived him a little. An ambulance was quickly on the scene, and the Red Knight was hurried off to Courtrai and hospital.

The news that their commander had been shot down in an air fight by an English two-seater came as a great shock to the Richthofen Squadron which had been formed only a fortnight before. Actually, it was on June 24th that *Jagdgeschwader 1* of the German Air Service first came into existence. Its strength was made up of four *staffels*, and very soon the new unit became known along the whole of the Western Front as the Richthofen "Circus."

Less than fourteen days after its forma-

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tion, Richthofen, as has been described, fell under the guns of a British 'plane, but, even during the temporary absence of its famous leader, the Circus continued to make history. Richthofen had previously commanded *Staffel 11*, but on his promotion to squadron commander, his friend, Kurt Wolff, had taken over *Staffel 11*, while command of the other three *staffels*, Nos. 4, 6 and 10, which made up the Richthofen Squadron, were retained by von Doering, Dostler and von Althaus respectively. It was von Doering, of *Staffel 4*, who now took over the command of the Squadron during Richthofen's absence.

On the day after the Red Baron's crash, three Sopwith triplanes, hurrying home across the lines, ran into *Staffel 11*, and all three went down in flames before the concerted attack of the Fokkers. One of the Sopwiths fell to Kurt Wolff, who landed alongside his victim to collect a souvenir. As he prised the engine number from the wrecked Sopwith with the help of a bayonet lent him by a nearby infantryman, he little knew that this, his thirty-third victory, was destined to be his last. Yet, so it proved for, four days later, he took-off from Marcebeeke at the head of his *staffel*, and within ten minutes had returned alone to climb shakily down from his triplane. His left arm hung limply by his side, for a bullet had gone through his hand, and the young *Pour le Meritè* winner was carried off to join Richthofen in Courtrai Hospital.

But even with two of their best pilots out of action, the Circus still continued its successful career. Oberleutnant Dostler now became the star performer in the Squadron, "bagging" two Sopwith Camels on July 12th, and another Camel and a Nieuport on the following day to bring his score up to eighteen. He had one particularly promising pilot under him, a Leutnant Krebs, who had already scored five victories during the short life of the Squadron. Krebs added two more Allied 'planes to his score on the 13th, but three days later he was seen to fall in flames at Zonnenbeke.

A Present from the Kaiser

VICTORY after victory was entered in the Squadron's records during those days, but it was inevitable that the British pilots should also claim their victories. Unfortunately for the Circus, their victim on August 21st was Oberleutnant Dostler who had, by then, run his score to twenty-six and had been decorated with the *Pour le Meritè*. He took-off on a patrol about mid-day, but several hours later he had not returned.

The Circus would not normally have been alarmed, for it was a frequent occurrence for a pilot to have to make a forced-landing at another aerodrome. But, in this case, a 'plane answering in description to Dostler's had been seen to fall between the lines at Frezenberg. It had not been possible to identify it as, soon afterwards, the area was subjected to heavy shell-fire, and in the morning all trace of the 'plane had disappeared. Yet still the Squadron hoped, and on the 24th those hopes were raised by a report that a British prisoner had stated that Dostler was alive in British hands. Like many other such statements it was subsequently proved untrue, and Dostler lies buried in an unknown grave.

A week or two before Dostler's death, certain changes had taken place in the personnel of the Richthofen Squadron and von Althaus had been succeeded by Oberleutnant Voss. The new leader of *Staffel 10* brought with him a record of thirty-four 'planes destroyed, and at his throat hung the coveted *Pour le Meritè*.

September saw the Circus strike a victorious vein which was to outrival even the records of "Bloody April." Leutnant Wuesthoff, who had already made a name for himself as a skilful fighter, shot down an R.E.8 and a Sopwith Camel on the second of the month and, two days later, two more Camels fell to his guns. The great Richthofen, too, recovered from his wound, was now back with his squadron and added two more victims to his score during those early days of September.

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Then, suddenly, the Circus was robbed of one of its best pilots when Wolff, barely recovered from the wound he had received in July, went down under the guns of an S.E. pilot from No. 56 Squadron. Three days later, a sad group of officers gathered in the Church of St. Joseph's at Courtrai to pay their last respects to their fallen comrade. After a short service, the body of Kurt Wolff was entrained for his birthplace, Memel, where his grave can be seen to-day.

A few days later, *Staffel 4* were in a hot dogfight with a formation of Spads and, after a battle of turns, both von Doering and Wuesthoff each accounted for an Allied 'plane. On the afternoon patrol, they again met the same formation over the lines and, once again, Wuesthoff picked out his opponent and sent him spinning to death in the German lines.

Richthofen was now finding his old form again, and shortly after his sixtieth victory had been announced, a bulky packing-case arrived for him from Berlin. It contained a bronze bust of the Kaiser, inscribed "*To the courageous air fighter, Rittmeister Freiherr von Richthofen, from his grateful Sovereign.*" To-day, this same statuette has pride of place in the Richthofen Museum at Schweidnitz.

The Squadron, meanwhile, had had to mourn the passing of another of their number, for Voss, an "ace" with forty-eight victories to his credit, had fought his last fight with Rhys-Davids on September 23rd. The magnificent fight that he put up against overwhelming odds is one of the most stirring chapters in the history of the War in the Air, and there were few who witnessed his heroic, lone-handed combat with six British machines who did not echo his victor's words, "Oh! If only I could have brought him down alive!"

In the last days of October there occurred an incident of which Richthofen was not particularly proud and which he never recorded. He was, at the time it happened, leading *Staffel 11* over the lines in appalling weather and suddenly saw one of his *staffel* making erratically

for the German lines. Another glance at the falling 'plane told him that its pilot was his own brother, Lothar. Forward went his stick and down dropped the Red Knight in the wake of his younger brother. Lothar landed his triplane on rough ground and came safely to rest, but Manfred was unlucky and smashed his undercarriage as his triplane touched ground. His 'plane was a complete "write off," but Richthofen climbed out uninjured. Lothar, who had apparently had engine trouble, hurried over to his brother's wrecked 'plane. For a moment, Manfred looked icily at him and then, without a word, he turned and walked away.

A Collision in Mid-air

THE fighting in the air continued unabated throughout November, and Wuesthoff's name, in particular, appeared frequently in the victory list at this time. Then, on the 15th of the month, *Staffel 4* lost their flight commander, Lieutenant Adam, and the manner of his death was particularly galling to the Squadron as this famous "ace" and leader was shot down by a British pilot who was making his first offensive patrol over the lines. Three days later, this same pilot was himself shot down in the German lines, and before he died he told of his victory. The time and place tallied exactly with Adam's death and, as a result of the information he gave, the wreckage of Adam's Albatros was found. But for three days his comrades searched in vain for his body, until at last it was found hidden among some bushes, stripped of its clothing. German soldiers had even stooped to rob the body of one of their own "aces."

On November 23rd, Richthofen scored his sixty-third victory, while Lothar shot down a Bristol Fighter in flames on the same day. Two days later, Klein crashed his triplane on the Squadron's aerodrome, but walked away from the wreckage without a scratch. There were a number of crashes and forced-landings about this time as the weather was misty and there was a lot of low cloud.

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The weather remained "dud" throughout December, 1917, and the Circus took the air but rarely. Altogether, the month was destined to be a bad one for them, for only five victories were confirmed, while two of their pilots failed to return from patrol. In fact, their only stroke of luck was when Leutnants Mohnicke and Boddin collided in mid-air—and got away with it. Mohnicke crashed, but escaped injury, while Boddin, with great skill, managed to bring his damaged triplane safely back to the aerodrome.

Bad flying conditions persisted throughout January of 1918, and although Reinhard and Loewenhardt scored victories in the early days of the month, three more names had been entered on the roll of the missing. But for once, one of these losses had a happy sequel. On January 13th Lieutenant Stapenhorst had set out to attack the balloon lines at Cambrai, and when he failed to return after some ground officers had seen his 'plane go into a dive just before reaching the enemy balloons, he was reported "missing, believed killed." A month later, however, the Circus heard from the Red Cross Society that a certain Lieutenant Stapenhorst had been shot down by an Allied 'plane as he tried to bring down a balloon at Cambrai on January 13th, and that this airman had been captured and was a prisoner in England. A few weeks later the news was confirmed by a card which the Circus received from Stapenhorst, one of the very few members of the Richthofen Circus to find his way into English captivity.

In March, the Squadron moved forward and took over the old British aerodrome at Lechelle. Bodenschatz, the Squadron adjutant, was very disappointed to find the buildings half destroyed and the earth reeking of the petrol which had been poured into the ground before the British pilots evacuated the aerodrome. The ground was also pitted with shell-holes, but the Squadron's staff worked all night and, within two days, the Circus was again ready for action.

Richthofen's Last Wish

RICHTHOFEN was in great good humour at this time, for during the previous three days he had added four more victims to his list, the total of which now stood at 70. It was still further increased a few days later when, on March 27th, the Squadron took part in a large-scale dogfight at a height of a thousand feet above the lines. When the day closed, the wreckage of thirteen British 'planes lay scattered over a wide area—and the Circus had not lost a single pilot.

Flying with Richthofen that day was Lieutenant Udet, newly-drafted to the Circus, and after he had seen the Red Knight add two more victories to his score, he came down on the tail of an R.E.8 and sent it crashing to destruction as his twenty-second victory. That evening, the whole Squadron gathered in the mess, and Richthofen read a telegram of congratulation to them which had been sent by the Chief of the Air Service.

Early in April, the weather changed again and, Lechelle aerodrome proving unsuitable, the Circus once more got on the move and took over the flying-ground at Cappy.

On April 20th, Manfred von Richthofen sent down Major Barker and Lieutenant Lewis in flaming Camels, but his own fate was almost upon him. The very next day, at about 11.30 in the morning, he was seen to land in the British lines, and the career of Germany's greatest ace was ended. Richthofen left a note which ran simply: "*Should I not return, Oberleutnant Reinhard is to take over the Squadron.*" The High Command respected his last wish and the walking-stick which Richthofen had always carried when in command of the Squadron, and which had come to be known as the "squadron stick," was duly handed over to Reinhard.

Reinhard's own *staffel* was taken over by Janzen, while *Staffel* 11 also received a new leader in place of Lothar von Richthofen, who had been wounded in March. His successor was Lieutenant Weiss, a gifted pilot who flew an all-

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white triplane of exceptional performance. The day after Richthofen had fallen, he scored his eighteenth victory, but he was not long to survive his famous leader. On May 2nd, while flying at the head of his new command, he encountered a flight of Sopwith Camels, and as the other triplanes of his flight could not climb as fast as the British 'planes, only Weiss, with his hotted-up engine, managed to reach the Camels and to engage them. Hopelessly outnumbered, he put up a gallant show, but within a few minutes he was plunging earthwards, shot through the head. And before that disastrous day ended another pilot from *Staffel 11*, the veteran Serg-Scholz, crashed his triplane on the boundary of Cappy aerodrome and was instantly killed.

Those early days of May were none too happy ones for *Staffel 11* which, at one time, had only one pilot fit to fly. As a unit, however, the Circus was highly successful, and in a hot dogfight over Cherisy, on May 10th, they shot down seven out of a formation of eight Camels. Soon afterwards, they encountered a formation of D.H.9 day-bombers returning from a raid and sent three of them down in flames.

The Richthofen Squadron never liked Cappy, however, and after their leader's death it was considered by some pilots to be unlucky. It was therefore with considerable relief that orders were received in mid-May for a move to Laon, where a new offensive was planned. A few days before they left, however, the Circus had to mourn yet another of their pilots, this time the ever-smiling Joachim Wolff, who had crashed to his death over Lamotte with two Vickers bullets through his heart. Wolff had been one of Richthofen's greatest friends, with the honour of protecting his tail in dogfights, and was one of the most popular men in the Circus.

Fighting the French

AT Laon, the Squadron were opposed to French airmen, and they did not find them quite such doughty opponents as the British pilots whom they had been

up against at Cappy. Nevertheless, ignorance of the new country over which they were now flying resulted in the loss of several of their pilots. One of the most unfortunate cases occurred during the last days of May when a pilot of *Staffel 10* had forced-landed on an old French aerodrome, slightly damaging his undercarriage. Reinhard, hearing of his plight, sent another squadron-member to collect him in one of the Circus's two-seaters, but although the pilot was given exact directions, and was told that there were six abandoned French machines behind a hangar, he landed on an aerodrome that was still occupied by the French—and was quickly informed of his mistake.

Meanwhile, Udet and Loewenhardt, who now wore the *Pour le Meritè* and led *Staffel 11*, were running a neck-and-neck race for the position of leading "ace," and when on June 5th thirteen French 'planes fell to the Squadron, both Udet and Loewenhardt could claim their twenty-seventh victories. Such a "killing," however, was unusual, for the Circus had been doing such damage that its pilots were finding it increasingly difficult to get a fight unless they hunted in twos and threes and attacked formations greater than their own.

As the summer wore on, the offensive died down, and Reinhard went off to attend the Test Meeting in Berlin. This meeting had been inaugurated by Richthofen, who considered that front-line pilots should themselves test the new types of 'planes they would later have to fly. The High Command had agreed, as they did with most of Richthofen's suggestions, and thereafter all new designs were approved by active-service pilots before being ordered in quantity. Unfortunately, Reinhard picked a faulty machine on which to carry out his test, and when it broke up in mid-air, the Richthofen Circus was once more leaderless.

It was several days before a successor to Reinhard could be found and, to the great surprise of the Squadron, an outsider was chosen to take over the command. This was Oberleutnant Göering

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from *Staffel 27*, who brought with him a record of twenty-one 'planes destroyed and the reputation of a brilliant organiser. His arrival, however, was ill-omened, and coincided with the deaths, in curious circumstances, of two Circus pilots.

The first to go was Leutnant Friedrichs, an "ace" with twenty victories. He was on patrol on July 15th when suddenly his machine was seen to burst into flames. Friedrichs jumped with his parachute, but like many of those early 'chutes, it failed to open and he was killed. Later, it was found that his machine had been set on fire as a result of the tracer bullets in his ammunition belt being ignited by the heat of the sun.

The second victim was claimed the very next day when Leutnant Kirschstein, a twenty-seven-victory "ace," flew his camouflaged Fokker over to Fismes Aircraft Park for some repairs to be done. He arranged to return as a passenger in a two-seater Hannoveraner, but the pilot misjudged his take-off and crashed, killing both himself and his more distinguished passenger.

The Squadron were now stationed at Champry and their records of that period show a heavy toll of Nieuports and Spads flown by American pilots, as many as nine and ten victories being recorded on several days. They were expecting to be moved northwards at any moment, but before any definite orders were received, grave news came to hand from the headquarters of the 2nd Army. The Allies had broken through the lines at Villers-Brettonneux, and the German troops were in urgent need of air protection.

At Loewenhardt's suggestion, only the more experienced pilots were chosen for this task. Their machines were hurriedly prepared and, led by Loewenhardt, they set out for Peronne, some forty minutes' flying time distant. As this band of picked pilots neared their objective, they spotted high above them, a flight of D.H.9's. At once they climbed to the attack but, losing the bombers in a cloud-bank, were forced to give up the chase. Shortly afterwards, the Squadron landed again to refuel,

and while engaged in this work, five Bristol Fighters came down low and thoroughly "shot-up" the aerodrome, much to the mortification of the "grounded" aces.

Later in the day, however, the Circus was in the thick of the fighting and were able to take a heavy toll of revenge. Both Loewenhardt and Lothar brought down three British single-seaters, and Udet also accounted for two Sopwith Camels. As the daylight faded, Leutnant Wenzl of *Staffel 11* brought down a two-seater of new type—the first D.H.12 to fall into German hands.

The Last Dogfight

THE air fighting waxed fierce in those August days, but though the Squadron scored many victories, they also suffered some severe losses. Perhaps their most serious loss was that of Loewenhardt on the 10th. He had just shot down an S.E.5, and as he turned to attack another he came into collision with a pilot from *Staffel 11*, and the two 'planes fell locked together. Both men jumped with their parachutes, but Loewenhardt's failed to open and he dropped like a stone into the German lines. Three days later, Lothar von Richthofen received another wound. He managed to bring his triplane out of the dogfight and to land within the German lines before loss of blood caused him to faint. He was still in hospital when the War ended.

In September, first at Metz and later at Marville, the Squadron found itself opposed to raw American pilots who were easy game for the experienced pilots of the Circus. Such names as Notlenius, Neckel, the new leader of *Staffel 6*, and Udet now became prominent in the records. The last-named added two D.H.4's to his record on the 26th of the month, but in this engagement, in which five American 'planes were brought down, he received a slight wound which put him out of action for the remainder of the War.

Wenzl of *Staffel 11* has left on record an amusing experience that occurred about this time. Whilst engaged with

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a number of S.E.'s, he and his men were suddenly attacked by a squadron of Camels. Formation piled upon formation, and a Pfalz *staffel* joined the fray. Unfortunately for *Staffel* 11, however, their would-be rescuers had passed the bottle pretty freely at mess, and were more often shooting at their countrymen than at the enemy. Luckily for the Richthofen men, their shooting was too inaccurate to do any damage.

By now, the German pilots were more than holding their own in the air, but on the ground their troops were falling steadily back under the terrific pressure of the Allied advance. In the last days of October, Notlenius, an inveterate balloon "strafer," added four more gasbags to his list, whilst a fellow pilot in the Circus, Laumann, received the last *Pour le Meritè* to be awarded to the Richthofen Squadron.

On the morning of November 6th, the Squadron was engaged in its last dog-fight, and three Spads fell to their guns. Rumours of mutiny in the fleet at Kiel and of street fighting in Berlin had come to the Squadron's ears, but, at first, were ridiculed by every officer. Then, on the 8th, came the astounding news

that the Squadron was to fly to Darmstadt to be demobilised. The Circus at that time was stationed at Tellencourt, but pouring rain kept them grounded, and it was not until the 12th that they were able to obey their orders and take-off for Darmstadt. By then they had lost all their ammunition, which had been commandeered by the retreating German troops to provide a gigantic firework display.

In Darmstadt they learned the bitter truth. The German Air Service was to be abolished, and the Circus was ordered to hand over its 'planes to an American unit at Strasbourg.

To Göering, the Squadron's commander, fell the sad task of writing the last entry in the war diary of the Richthofen Squadron. In its sixteen months' existence, the Circus had scored 640 victories for the loss of 56 pilots killed and 520 officers and other ranks wounded. Fifteen officers had been awarded the *Pour le Meritè*, the highest decoration a German airman could win. It is a record that the Richthofen Squadron which now forms a distinguished part of the German Air Force of to-day, can and does look back upon with pride.

THE STORY BEHIND THE COVER:

THIS TROOP-CARRIER IS ALSO A BOMBER

INTO this month's bold cover painting by S. R. Drigin, fly two Bristol Bombays, representative of the latest type of bomber-transport to be adopted for the equipment of the Royal Air Force.

Following the present vogue in British military aircraft design, the Bombay is a monoplane though, being of the high-wing type, it shares with the Harrow and the Lysander a certain distinction over the more common low and middle-wing types now in service with the R.A.F.

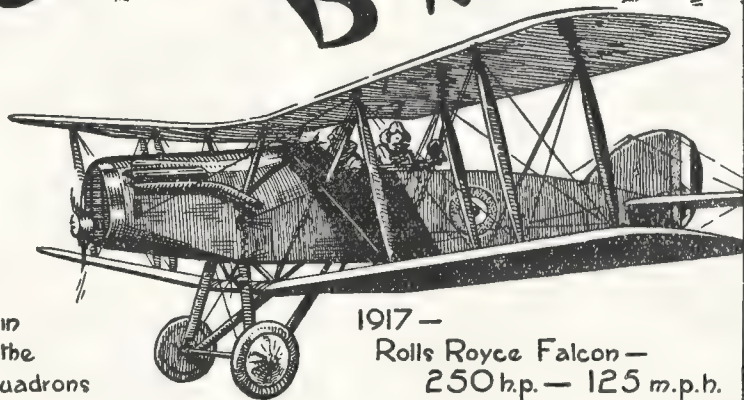
The fuselage of the Bombay is of monocoque construction, a form of building in which the main loads in the structure are taken by the "skin" or outer covering of the fuselage. The wings and twin-ruddered tail unit are of metal construction, and hydraulically-operated trailing-edge flaps are fitted to the main plane to assist in securing the lowest possible landing speed.

Bomber-transports, as a class, supersede the troop-carriers formerly used by the Royal Air Force, and must be equally adaptable for use as heavy bombers or as military transport vehicles. Thus the Bombay can accommodate twenty-four fully-armed soldiers and a crew of three, or, with a crew of four, can carry a very substantial load of bombs, all stowed internally and released through traps in the fuselage floor. In either capacity she is well able to defend herself against attack by enemy aircraft for, in addition to a mechanically operated, rotatable gun-turret in the nose, there is also a second gun position in an open cockpit at the extreme end of the fuselage, behind the tail-unit.

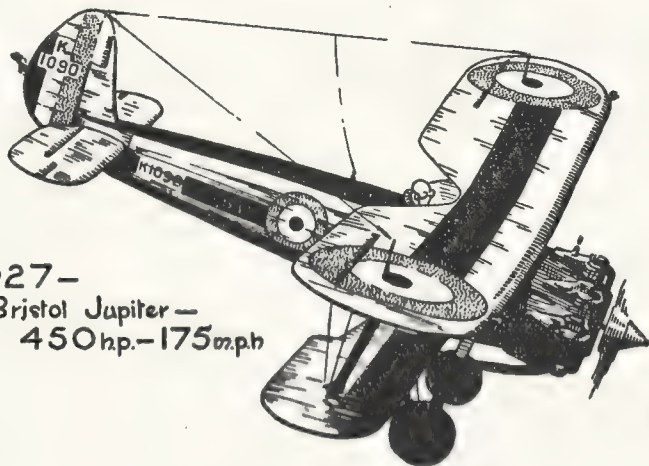
Fully loaded, the Bombay weighs 19,000 lb., and its principal dimensions are a span of 96 feet, a length of 67 feet 9 inches, and an overall height of 16 feet.

THE BULLDOG BREED

1917 saw the advent of the Bristol Fighter which helped to turn the tide of the War in the Air & contributed to R.F.C. & R.A.F. supremacy until the Armistice. The 'Biff' continued in constant service with the army co-operation squadrons of the R.A.F. until 1930.



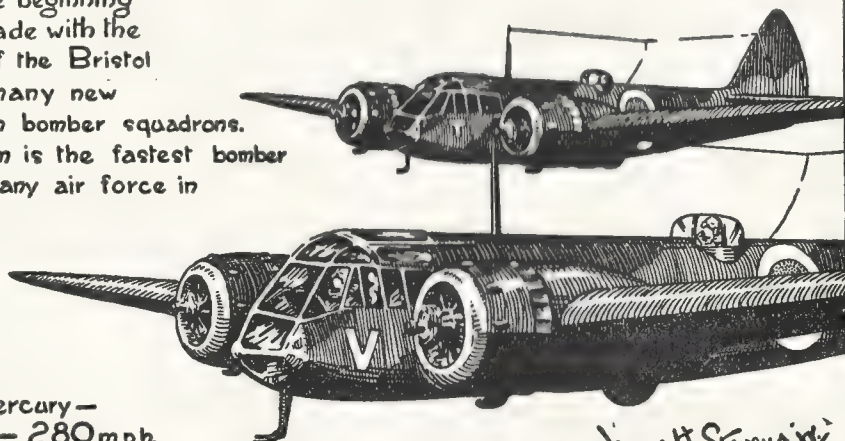
1917 —
Rolls Royce Falcon —
250 h.p. — 125 m.p.h.



1927 —
Bristol Jupiter —
450 h.p. — 175 m.p.h.

The Bristol Bulldog arrived in 1927 and became the standard R.A.F. day-and-night fighter. The majority of the fighter squadrons used the Bulldog until its comparatively recent replacement by the Gloster Gauntlet.

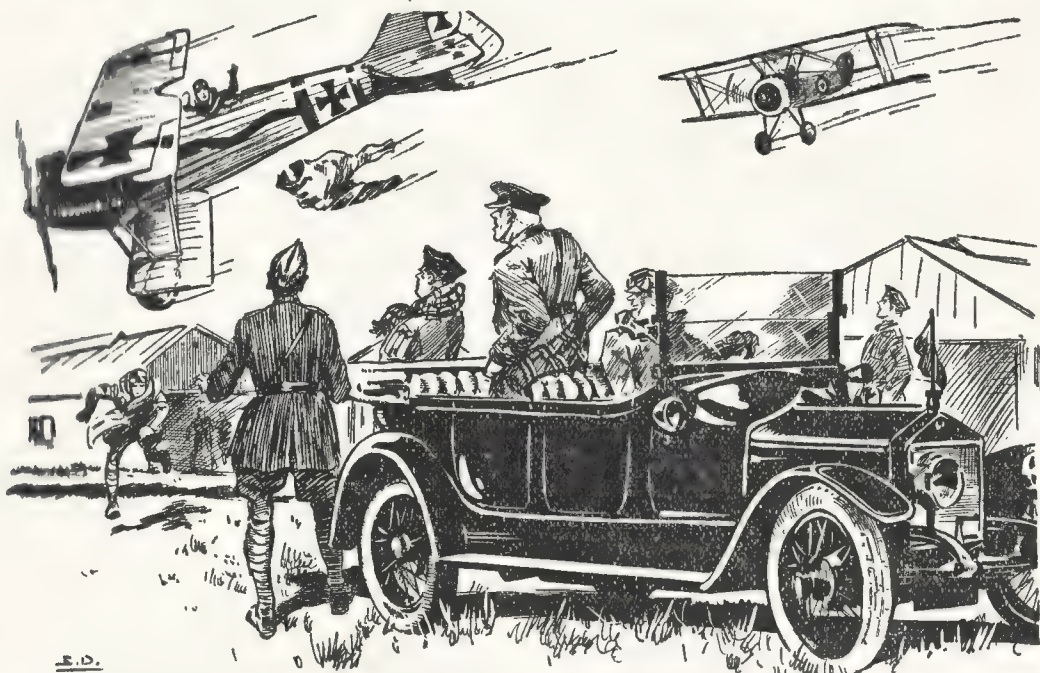
1937 saw the beginning of a third decade with the appearance of the Bristol Blenheim in many new R.A.F. medium bomber squadrons. The Blenheim is the fastest bomber in service in any air force in the World.



1938 —
2 Bristol Mercury —
840 h.p. — 280 m.p.h.

James H. Stevens jr.

BREECHES OF DISCIPLINE



From the leading 'plane, the astonished watchers saw something flung overboard. . . .

Colonel Blotten was under no Delusions as to his Own Importance, but there are Occasions when even Staff Officers need more than Brass Hats to Preserve their Dignity

By MAJOR L. S. METFORD

(Late of No. 13 Squadron, R.F.C.)

CHAPTER I

A Squadron is Caught Napping

"NOBBY" Clarke banked over the hangars at two hundred feet to make an up-wind landing. As he craned his neck over the side to make sure that all was clear below, he cursed under his breath, took off the bank, opened the throttle and climbed hurriedly.

Which was strange, for he had been out for over two hours and he was hungry. As a matter of fact, Lieutenant "Nobby" Clarke, R.F.C., was always hungry. He ate at all times and in all places, and when he wasn't eating, which was seldom, he was sucking bull's-eyes—brown and white striped

abominations about the size of a glass "alley."

His nickname was all wrong. Nobby? Decidedly not. There wasn't a knob about him. With his five feet nine and fourteen stone he was practically spherical. Tubby? Yes. But as tradition decrees that all Clarkes are "Nobbys," it was "Nobby" that Clarke became.

And, of course, being the shape he was, they put him in a scout. Had he been about nine stone and as thin as a rail, he would doubtless have been given a bomber, and the bigger the better.

Strangely enough, considering the fact that he wheezed a little when they crammed him in and much when they

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levered him out, he liked scouts. In fact, the irrepressibly cheerful Clarke liked most things in life, and hated only one. That one hatred was of being late for meals, which was why he was cursing now as he set his Sopwith Camel climbing while he thought things out.

It was a matter that demanded serious thinking, for, just as he was coming in to land, he had caught sight of a round dozen pilots lined up in front of the hangars while a tall and very dapper individual stalked up and down in front of them, gesticulating angrily. Nobby did not need to guess at what was being said by this very dapper officer with the red tabs. He knew. And because he knew, he looked down dolefully at his orange and mauve pyjama-ed legs.

During the hot weather, it had become a habit in the Squadron to commit aviation in pyjamas with a tunic thrown over the top. It had, in fact, become quite the thing. Major Sharpness, who commanded the Squadron, had doubtless started it all, quite without premeditation, by testing the air one morning in pyjamas, gum boots and a British warm with a red muffler tied round his neck. The other pilots of the Squadron had taken to his example, as ducks to water. The advantages of such light attire were many: coolness, an extra ten minutes' sleep before taking-off, freedom of action with controls and machine-gun, and others of no less obvious merit.

Unfortunately, the wearing of this nondescript and highly unmilitary raiment was now, officially, a thing of the past, and had been ever since a visiting "brass-hat"—the same whom Nobby had just observed beneath him, arriving, unheralded, upon the aerodrome—had put what is commonly known as the "kibosh" on it.

The Colonel had first turned sea-green and then purple about the gills, as he witnessed the descent of half a dozen pairs of rainbow-hued legs from an equal number of returning 'planes.

Nobby grinned reflectively as he recalled part of the ensuing lecture :

"Disgraceful. P-p-positively indecent," the Colonel had spluttered in righteous indignation. "How would you, young man," he had demanded, turning his monocle upon Nobby whose nether garments habitually rivalled Joseph's coat of many colours. "How would you like to be captured in your pyjamas?"

"I'd hate it, sir," that young gentleman had replied with perfect candour; "Either with or without 'em, sir."

"And think of the effect on the German morale," the Staff Officer had continued, ignoring Nobby and turning to Major Sharpness, who was similarly attired. "They'd think we could not afford to clothe our troops. Scandalous, gentlemen!" he had concluded wrathfully, "P-p-perfectly scandalous. See that it does not occur again."

But the matter had never appeared in Orders, and the hard-bitten little squadron-commander, who had his own ideas about discipline, as he had about most other things, had continued to take the air as before, a fashion followed without comment by the rest of his pilots.

IT appeared to Nobby Clarke, circling Iwarily overhead, that the visit had now been repeated and that the boys had been caught, metaphorically speaking, by the short hairs.

Being unmindful to share the same fate, and breakfast being distinctly indicated, he thereupon decided that a twelve-mile jaunt over to No. 135 Squadron's hospitable mess would be in order. What little he had observed on his short reconnaissance could be telephoned through to the friendly Recording Officer—it was negative anyway—and he could return home at leisure on repletion, when the "strafe" was over.

Still having ample fuel in his tanks, he put on a little right rudder and pulled the stick towards him. Grinning cheerfully to himself at the thought that some ten minutes would bring him within sight of sustenance—and No. 135 had a reputation for bountiful fare—he car-

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ried on, lustily shouting that bit about "Any Time's Kissing Time" from "Chu Chin Chow," a show which he had witnessed for the fourth time during his last leave. He had just reached the "A" somewhere up in the treble on which he usually cracked, when he was startled by an echoing rattle behind him which he recognised only too well.

With his mouth still open on the unfortunate "A," he flung the 'plane on to a wing-tip instinctively, and slithered downwards. Turning, he was just in time to see a Roland bearing down upon him, and to slip aside as orange flashes flickered at its twin Spandau muzzles. He corkscrewed upwards, all thoughts of "Chu Chin Chow" and breakfast gone from his mind, and intent only on downing the Roland which had attacked him so unexpectedly far inside the British lines.

For a while, neither pilot seemed to gain any advantage over the other until, with a swift turn which took his opponent unawares, Nobby Clarke got in a short burst. Whether it did any harm or not he was unable to judge, but the German pilot dived steeply, banked over in the opposite direction to that which Nobby had expected, and an instant later had zoomed upwards and got on to his tail. Then began the most strenuous single-handed duel Nobby ever remembered to have taken part in. A first-class pilot and a deadly shot with a machine-gun, he was quick to recognise that in this adversary he had met one who knew as much about the game as he did himself—perhaps, he decided hurriedly as he skidded in the nick of time to avoid a well-directed burst, a shade more.

A moment later he smelled something burning, and if there was one thing Nobby really feared, it was fire in the air. He had seen much of it during the time he had been in France and he had brought down more than one "flamer" himself, but he had always felt his hair crinkle on the back of his neck when he had been responsible for them. Nor did it seem to make much difference whether it were one of the Flight or one of the "Others" who

was brought down. He always felt sick and faint at the sight.

It was, therefore, with considerable apprehension that he sniffed the tainted atmosphere, wondering where the smell could come from. His engine was running perfectly; there was no petrol from a punctured tank or broken feed-line on the floor; nor, indeed, did it smell like fire caused by petrol.

Then he noticed that his opponent was no longer using him as a target; in fact, to his enormous surprise, he saw him manœuvre his machine close alongside and make energetic gestures towards the tail of the British 'plane. Mightily puzzled, Nobby managed to crane his head round, and his heart missed two or three beats as he saw, from the outer corner of his left-hand goggle, that a little plume of smoke was slipping rudderwards in the propeller wash.

CHAPTER II

Fire in the Air

WITH a quick glance at his altimeter, Nobby Clarke tugged at his belt. Calculating shrewdly, he closed the throttle a trifle as he slipped the pin from his belt.

Squirming and struggling, he at last managed to turn round in his seat, leaving the 'plane to its own devices. Wrenching and tearing, he succeeded in forcing his head and shoulders between the cross-bracing wires behind his seat; a feat he was never afterwards able either to explain or duplicate, despite many attempts.

Stretched at full length, with his feet outside the cockpit, he found a little flame licking along the top longeron and just beyond his reach. He tore off his flying-cap and beat at it madly, shattering his goggles. Then he began to cough as the smoke changed direction and blew into his face. Choking and half-blinded, he realised that the 'plane must be slipping down tail-first, hence the changed direction of the smoke. He wondered dully how far he was still above the ground, but this

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seemed unimportant compared with the problem of quenching the flames.

A final, desperate exertion and he managed to reach the flame with a lucky flick of his cap. But the little red flower bloomed again and again, and it seemed ages before he had it really out.

For a few seconds Nobby Clarke lay relaxed; sometimes on his stomach, sometimes on his back and again on one side or the other as the 'plane gyrated madly and uncontrolled about the sky. Then, the first awful danger overcome, a second confronted him: that of making a safe landing or, alternatively, carrying on the scrap, for he had suddenly realised that somewhere nearby a gentleman in a Roland doubtless awaited his reappearance—though why he had held his fire for so long, defeated him entirely.

Nobby tried to edge backwards, but found it impossible. He seemed to be streamlined the wrong way. Meanwhile, the muffled sound of the engine dinned in his ears, labouring heavily one moment as if the 'plane were climbing steeply, and rising again to a shrill scream as the craft dived earthwards.

It was on one of these latter occasions, when the 'plane was diving on its back, that Nobby felt the pressure slightly relax. It was probably due to the pull of gravity at his feet and to the fact that his back was now pressing against the base of the triangle formed by two cross-bracing wires and an inter-longeron strut, instead of his tummy being firmly wedged in the apex, as when the 'plane was flying right side up.

Exerting all the strength he could muster in his constricted quarters, Nobby arched his back and forced his body downwards. There was a sudden report—later they found the inter-longeron strut had snapped—and he slipped free. With an agility none would ever have suspected him of possessing, he fell back into his seat, took one hasty glance over the side, and gave himself up for lost.

Rushing past and towards him—he was never afterwards quite certain which, or if it were not both together—was a green field: so close that it seemed he

had only to stretch forth a hand and the grass would ripple between his fingers. Confused, and with his head spinning from the smoke and his exertions, he eased the stick back instinctively, while his other hand shoved open the throttle to give more effect to the supporting surfaces.

The green expanse, now horribly close, reluctantly gave place to blue sky. Nobby took one hasty glance round, saw a clear spot and promptly cut the engine switch. He felt the wheels bump slightly, eased the stick forward to dampen the rebound, and sank back with closed eyes, perspiration streaming down his face.

NOBBY CLARKE was never able to say how long he remained in his stupor of exhaustion, but he was quite emphatic that if life and freedom had depended upon his opening his eyes and doing something about it, death or capture would assuredly have been his lot.

In fact, it was the unexpected sound of a voice beside him which woke him from his daze.

"Nice work, my friend," remarked the voice, almost in his ear. "Very nicely done indeed."

Nobby Clarke opened his eyes slowly, incuriously. Turning his head, he saw a face from which the goggles had been lifted to the flying-cap, smiling at him approvingly.

He leaned towards the speaker and slowly grinned back.

"A spot of luck, what?" he croaked hoarsely, for his lungs were still smoke-laden. "How the blazes it happened, I'm hanged if I know. Give me a hand, will you? It's a pretty tight fit in here."

The newcomer swung himself astride the fuselage and Nobby felt muscular arms beneath his shoulders.

A couple of minutes later he was on the ground, leaning against the side of the fuselage. He fumbled for cigarettes and held out his case.

"Have a gasper?" he invited; then as he saw the man before him in full detail for the first time, he closed the case with a snap.

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"A Hun!" he blurted. "How the devil did you get here? You surrender, of course?"

The smile, which a moment before had lit the stranger's face, vanished.

"Please not to use that word again," he snapped. "It is not what one gentleman expects from another."

Nobby felt his face redden. After all, the fellow had helped him, and seemed a decent sort.

"Sorry," he mumbled. "Force of habit, you know. But how *did* you get here?"

The German pilot pointed across the field to where a trim biplane, its engine ticking over, was facing up-wind, evidently ready for a quick take-off.

"A Roland!" exclaimed Nobby blankly. "Why, I was having a scrap with one . . ." he broke off suddenly. "Were you the fellow I was sparring with?" he demanded with a thin smile.

The German bowed slightly—mockingly it almost seemed—from the waist.

"I had that honour," he replied. "I landed for the purpose of offering my apologies for setting fire to your aeroplane. Normally, I should not apologise, but I had been *drachen*—you know, balloon 'strafing'," he continued. "I can only assume that an incendiary bullet was accidentally placed in the belt by a careless loader. With my apologies—which I trust you will do me the politeness to accept—I proffer you my sincere congratulations on your fortunate escape."

While he had been speaking in the painstakingly accurate English of the educated, high-caste German, Nobby was regarding him with interest. It was not so much the words he uttered, though they were surprising enough in the circumstances, but the individual himself who interested him. When he had finished, Nobby held out his hand:

"I'm probably guilty of fraternising with the enemy, and due to be shot at dawn, and all that," he remarked, "but all the same I'd like to say you're a darned good sportsman."

The other drew himself up stiffly to attention, then he clicked his heels and bowed.

"I have the honour to introduce myself: the Leutnant Count Eitel von Dortmüsse," he announced.

Sudden astonishment showed in Nobby's eyes, then, also coming to attention, he gave a very fair imitation of both the click and the bow.

"Come off the high horse, Dormouse," he grinned. "Don't you remember me?"

Von Dortmüsse started in surprise, then peered into the Englishman's face. A smile of recognition lighted up his rather saturnine features and he clapped him on the shoulders with both hands:

"Nobbee Clarke!" he proclaimed. "Nobbee Clarke! *Gott im Himmel*. Nobbee—and to think I tried to shoot you down! Forgive me, dear friend. *Ach, leider!* This war—that makes us kill our friends. It is terrible!"

"Never mind, old thing," Nobby reminded him, "I tried to do the same to you. It's a long way from . . ."

". . . Tipperary," interposed the German quickly and with evident pride.

"Well—yes," agreed Nobby, "but I was going to say Brasenose. I knew we'd met somewhere as soon as I spotted that beak of yours, but I didn't think of pre-War Oxford for the moment. Look here, old bean, will you lend me your trousers for a few minutes?"

"MY—my trousers?" gasped the astonished German. "Did you say *trousers*?"

"Yes—so I can go and have breakfast. This is really a most providential meeting. I'll let you have 'em back; honour bright I will."

"I do not understand, Nobbee. We are men now, not undergraduate students. My trousers? Is it a joke?"

"Not by a dashed long way. Stop that revolving bit of old iron of yours for a minute and I'll tell you a story. I'll spin your prop. for you when you want to beetle off again."

"But am I not your prisoner?" asked the German ironically.

"Shut up. Don't be an ass," Nobby laughed.

Together, they walked over to the

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Roland while von Dortmusse switched off, Nobby examining the 'plane curiously meanwhile, since it was the first time he had seen one of this type at close quarters.

"Now listen," he explained. "We've got a particularly poisonous Staff Officer over at our aerodrome. This is, of course, treason and *lèse majesté* amongst other things, but it's true all the same."

And he gave his newly-found friend a brief resumé of the events which had led up to his request for the temporary loan of his trousers.

"You see, Dormouse, I'm dashed hungry—famished, in fact—and I was on my way to brekker when you set my 'bus on fire. I really think you ought to lend 'em to me in the circs."

"Hungry?" smiled von Dortmusse reminiscently. "Why, of course, you always were. Come; I have some chocolate. I will give it to you. Not good chocolate, you know. Too little sugar. Your blockade sees to that."

He dived into the 'plane's tiny locker and they shared a slab of almost tasteless chocolate whilst they chatted.

"Well, what about the trousers?" insisted Nobby.

"*Sicherlich nicht*," the German shook his head decisively. "'Nothing doing,' as you would say. *Ach*; it brings back old times to talk English again. We will talk of something else—hein?"

"Well, if you won't lend 'em to me, you won't. I hardly expected you to, anyway," grinned Nobby, ingenuously, "but I'll tell you what you can do. How's the time?" He glanced at his wrist watch. "Darn it; the thing's stopped, and no wonder." He held it to his ear and looked surprised. "No it hasn't. D'you mean to tell me it's only about a quarter of an hour since we—er—tangled, as it were?"

"'Tangled' is new to me, but I see what you mean. Yes; I should say that is right," the German agreed. "And now what is it you wish of me, my old friend, for I must go before some of your companions arrive."

For a space of perhaps a couple of minutes or so, the two airmen—friends

for a few years, then enemies by force of circumstances, and now allied again for a brief moment—hatched out a pretty little plot, with all the enjoyment of two schoolboys planning the bedevilment of an unpopular form-master.

CHAPTER III

A Colonel has Cold Knees

QUARTER of an hour later, a German aircraft, closely pursued yet never quite overtaken by a Camel with the British markings on wings and fuselage, fell apparently uncontrolled from a blue sky.

The pilot of the British 'plane, observing his antagonist to be falling out of control and, therefore, *hors de combat*, discontinued the chase, but circled slowly at about two thousand feet, evidently to make sure that his victim crashed.

Suddenly, when close to the ground, the German pilot contrived to get his machine under control and "contour-chased" across country in the direction of a white and dusty road along which a grey touring car was travelling. Some four miles behind it was the aerodrome at Froiselles, which it had recently left. In the front seat was a soldier-chauffeur. In the rear, sat Colonel Blotten (p.s.c.).

Presently, when the roar of an aeroplane engine, almost directly overhead, came to the ears of the occupants of the car, they seemed to sense that all was not well.

Looking up, they saw the German wing-markings; looking down immediately afterwards, they saw several little spurts of dust in the road ahead of them. The car stopped very quickly at the urgent command of Colonel Blotten and its two occupants dived hurriedly for the nearest ditch.

When the sound of the aircraft's engine had died away to a whispering clatter and swish of valve gear and propeller, the two held a brief consultation, then clambered out of the ditch. As they were about to re-enter the car, Leutnant Count Eitel von Dortmusse strolled across

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the road from a neighbouring field. In his hand was a Luger ; in his voice, a cool request that Colonel Blotten part immediately, if not sooner, with his nether garments.

The Colonel raved and stamped and fumed and swore, but three minutes later, the Dormouse had the latter's evacuated cavalry cords neatly tucked under one arm.

"I am indeed sorry to inconvenience you, Herr Kolonel," he apologised politely, "but an old friend of mine has need of these. Have the goodness to turn your car round and return to the aerodrome you have recently left—and at your best speed."

"I'll be hanged if I do ! " spluttered the enraged Colonel, sitting stiffly in the rear seat with a dust cloth over his bare knees. "I'll be . . ."

"You'll be shot if you don't," returned the Dormouse icily, levelling his pistol.

Without waiting for orders, the driver backed and turned the car, and by the time von Dortmusse had lifted his 'plane into the air, they were on their way and doing well over sixty.

THE car reached the aerodrome with the Roland sauntering along behind it almost at stalling speed. It entered the gates and pulled up in front of the squadron-office with a screech of brakes, while the Roland, diving almost to the ground, pulled up in a terrific zoom and, flipping over in a spectacular Immelmann, roared back whence it had come.

"Of all the blasted cheek ! " shouted someone, leading a dash for the 'planes gathered on the tarmac ready for the next patrol. "Look at that ruddy Hun right on our door-step. Come on, chaps ; let's get him ! "

But long before the first engine spluttered into life, the cause of the indignation had disappeared and the hunt was off, whilst Colonel Blotten, almost speechless, but foaming at the mouth with rage, was trying to shout for Major Sharpness.

"Back again, sir ? " the latter asked politely but unsmiling, for there was

little love lost between the pair, and the hard-faced little C.O. had not forgiven his visitor's remarks about his "slovenly squadron" a scant half hour before. "Have you forgotten something, sir ? "

"M-m-m-my breeches ! " stuttered Colonel Blotten wrathfully at length. "M-my breeches ! My God, man ; what in Hades is the use of our having a squadron stationed here if a damned Hun can come and take my breeches from me not four miles from your blasted unit ? By Heavens, Major Sharpness ; this is dis-disgraceful ! "

Sharpness, keeping his face as straight as he could, regretted he did not quite follow the Colonel.

"Your breeches, sir ? " he asked. "Did you say breeches ? Surely you had 'em on when you left here a little while ago ? Am I to understand someone's stolen 'em, sir ? "

By this time, much of the Squadron had collected in the locality of the car, and even the soldier-chauffeur, scared though he had been by the recent occurrence, could hardly refrain from smiling.

"What," demanded the irate Colonel, sweeping his arm round in a wide semicircle, "are all these grinning idiots standing about here for ? Why don't they go up and capture the feller ? He followed me all the way."

"I'm sorry, sir," said Sharpness, "but it's quite impossible. Why he's probably half way back to Berlin by now."

The crescendoing roar of aero engines, rapidly approaching, smote upon their ears and they looked up speculatively, whilst some half-turned and made for the 'planes aligned on the dead-line.

Then, down from aloft, flashed a German aircraft, closely pursued but never quite overtaken by a Camel with British markings on wings and fuselage. Down almost to the ground they sped, banked a trifle, left-handed, and thundered over the middle of the aerodrome.

From the leading 'plane the astonished watchers saw something flung overboard, whilst the pilot, with a wave of the hand, zoomed up again and disappeared at full speed towards the east.

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The pursuer thereupon turned upon a wing-tip and landed, taxying up to something lying on the ground.

For almost the first time in his flying career, Nobby Clarke heaved himself out of his cockpit unaided, picked up the object and wedged himself in again and came hurtling towards the tarmac with his tail well up and his wheels skimming the turf.

A minute or two later, disengaging himself from those who ran to meet him, he reached the side of the Staff car. Saluting smartly, he proffered a pair of cavalry cords to Major Sharpness.

"These fell out of the Roland, sir," he reported calmly without moving an eyelid.

Colonel Blotten's eyeballs nearly popped out of his head as he beheld his salvaged property.

"Mine!" he thundered. "Hand 'em over at once, sir!"

SHORTLY after the Colonel's departure, an orderly from the squadron-office sought out Lieutenant Nobby Clarke.

"Want to tell me anything about this morning's performance?" demanded Major Sharpness frigidly when his subordinate was standing before him.

Nobby, slightly nervous, but knowing no complicity could definitely be traced to him, answered, "No, sir."

"Good," replied Sharpness unexpectedly; "because I don't want to hear it if you do. I was over talking to Major McPherson early this morning and . . . what's the matter?"

"N-n-nothing, sir," stammered Nobby, who had suddenly remembered

that McPherson commanded No. 135. "Nothing at all, sir."

"Good. Coming back, I saw one of our 'buses and a Roland on the deck. The pilots were apparently chatting quite amicably. I have a good pair of field-glasses, and I noticed our man was wearing very chatty pyjamas. Your reconnaissance being over towards Hamel this morning would naturally not take you in that direction. I was on the point of coming down to investigate when they took-off, with the Roland in the lead. I began to follow 'em to see what it was all about when I found I was almost out of petrol and just scraped in home."

He stopped speaking and surveyed Nobby—now thoroughly scared and wondering when the axe would fall—with a thoughtful expression.

"Some of the German pilots are pretty good sportsmen, don't you think?" he then suggested, with apparent irrelevance.

"Er—I've heard so, sir," answered Nobby non-committally.

"Well; you can take it from me, they are," was Sharpness' emphatic reply. "All right. That's all. You can go now—but if you ever hear of any one of our fellows desiring to fraternise with the enemy, tell him I'll knock his block off if I catch him at it—and I probably would."

"Oh, and by the way," he added as a much relieved Nobby was half out of the door, "I rather gathered that the Colonel doesn't care a brass ha'penny if the Squadron likes to parade in a brassière and a loin cloth from now on."

Remember to Read

INVADERS OF ENGLAND

A Vivid Story of Aerial Warfare as it Might be To-morrow—of London Invaded from the Air—and of the R.A.F. Mobilised and in Action

By J. H. STAFFORD

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An Ace from "The Storks"

Nicknamed "The Bullet-Catcher," Albert Heurteaux, Leader of "The Storks," was Twelve Times Wounded in Air Combat, yet Gained Twenty - one Victories before his Twenty-fifth Birthday

By

A. H. PRITCHARD



Albert Heurteaux—a sketch from a War-time photograph

CAPTAIN ALBERT HEURTEAUX, the subject of this month's article, was the hero of a hundred sky fights and the victor over twenty-one enemy aircraft. He was a member of the famous Escadrille N. 3. "Les Cigognes," and the number of wounds he received in combat earned him the name of "Bullet-Catcher" among his comrades of "The Storks." Like that other famous French "Bullet-Catcher," Charles Nungesser, the pain of wounds could not damp Heurteaux's spirit, and time and again he left hospital to return where the bullets flew thickest.

He was born at Nantes on May 20, 1893, and the order for general mobilisation in August, 1914, saw him on his way to St. Cyr as a sub-lieutenant of Hussars, and before the War was a month old he had twice been cited for exceptional bravery in the field. While engaged upon a scouting patrol during the afternoon of August 24th, his squadron ran into a strong detachment of German infantry and, in the first rapid exchange of shots, his commanding officer was seriously wounded. Heurteaux promptly assumed command of

the squadron, and, realising that if the enemy encountered no opposition a nearby artillery battery would be overwhelmed and captured, he ordered his men to dismount and line the road. For nearly an hour his little band held up the enemy advance, and enabled the battery to limber up and withdraw from the danger zone. Then, despite the fact that he was outnumbered by twenty to one, he skilfully withdrew his effectives and casualties out of an exceedingly tight corner.

A week later Heurteaux was again instrumental in stemming a German advance, when he and his men held an abandoned "trench"—ditch would be a better name for it—until strong reinforcements arrived.

Posted to "The Storks"

BY October, however, the steady retreat and the rare opportunities for action began to pall upon Heurteaux, and on October 28th he applied for a transfer to L'Aviation Militaire. Somewhat to his surprise he was accepted, and was ordered to report to Escadrille Morane-Saulnier 23₄ on December 1st for duties

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as an observer. At this time Escadrille MS. 23 was the "crack" squadron of the French Air Service, and among Heurteaux's early pilots may be found such famous names as those of Garros, Gilbert, Pinsard and Pourpe. His chief claim to fame as an observer, however, was that he later became rear-cockpit man for Lt. De Dreuille, the first French night-bombing pilot, and the pair experienced many adventures during 1915.

On February 11th, for example, they made a daring solo raid on the railway station at Lutterback, and Heurteaux was mentioned in the orders of the day as "a bombing officer without equal."

Towards the end of the year Heurteaux secured his brevet as a pilot, and was almost immediately invited to join "Les Cigognes," and it was with them that he learned the fine arts of air fighting.

The morning of May 4th, 1916, brought Heurteaux his first victim—an L.V.G. two-seater that fell near Etain. The two-seater was flying serenely along under a cloud-bank when the Nieuport came through and the startled observer had time for only one short burst before the French pilot sent the L.V.G. down, minus its wings. That one burst had been good though, for eight bullet holes were afterwards found in Heurteaux's machine, and a long gash in the shoulder of his flying-coat marked the path of a bullet that had almost borne his number.

His next victory came during a fight with two two-seaters on July 9th, one of which he destroyed. Once again the Germans had made good shooting, however, for, on landing, the left wing of Heurteaux's machine collapsed, the main spar and bars of the V-strut having been almost shot through.

Heurteaux's score now began to increase rapidly, bearing in mind that this was 1916 and that the era of large formations had not yet arrived. Two more machines, a Fokker and a Rumpler, fell to his guns during the next three weeks, and on August 17th he became an "Ace," after a great fight with three Fokkers.

He had spotted a lone Fokker while patrolling over Moislains and was about

to attack when a fierce drumming along his fuselage signalled more E.A. on his tail. Two more Fokkers had dived down out of the sun, and they had the Nieuport in a perfect "box" of converging fire. Things looked black for Heurteaux until one pilot over-controlled and dropped slightly below him. A few days previously, all "The Stork's" Nieuports had been fitted with the new Vickers guns, and Heurteaux's new weapon sent lead into the Fokker's cockpit. The pilot reared up in his seat and then fell across his control-stick. His machine plunged on, to dash itself to pieces on the ground, six thousand feet below. Turning to tackle the remaining Fokkers, Heurteaux found that his gun gear had broken down and he had to resort to crazy flying until the Fokkers gave up chasing him and headed back for their aerodrome at Laon.

Lone Wolf Tactics

HEURTEAUX'S great friend, René Dorme, shot down his fifth victim on the 22nd, and a friendly rivalry sprung up between the two pilots as to who should destroy the most E.A. War forms many strange friendships, and that of Heurteaux and Dorme was great in its contrasts. Dorme, the Unpuncturable, who had only two bullet-holes in his machine after two years of war flying, a squat little man, shy and unassuming, who had risen from the ranks; on the other hand, Heurteaux, a born officer, returning from every flight with his machine full of holes, tall and fair, a gay, reckless, devil-may-care pilot.

But he had one thing in common with his friend; he loaded his own guns and personally supervised all repairs to his machine. His maxim was "always take the offensive, hold your fire until certain of a hit and never turn your back on a German—it is usually fatal." Like Guynemer, Heurteaux preferred lone patrols and based his attacks on the principle of dive, fire, and pull away. If you miss, go back and dive again.

On September 18th, Heurteaux shot down a fast Roland Scout for his seventh

AN ACE FROM "THE STORKS"

victory, and collected a flesh wound in his right thigh. Thirsting for revenge, he went out with Dorme in the afternoon of the 25th, and they ran into two Rumplers south of Barleux. With masterly skill, Dorme found the two-seater's blind spot and his chosen victim went down, manned by a dead pilot and observer. Heurteaux was having a harder struggle with his opponent, but had made himself an opening when two Rolands and a Fokker piled into the fight.

The Fokker pilot attacked Heurteaux nose-on, only to go down in flames when a well-placed burst reduced his engine to scrap-iron. Dorme, in the meantime, had sent the other Rumpier down with a holed petrol-tank, but as the machine made a good landing in a field, he did not receive credit for a victory. The two Frenchmen then chased the Rolands back home, and "strafed" the machines which were run out to help the pilots. A machine-gun mounted on a cart-wheel opened fire from a hangar roof, but suddenly became silent after Heurteaux had sprayed it with lead. The afternoon's combat thus brought Heurteaux his eighth victory, and Dorme his twelfth.

During the last week in September the weather began to break up and offensive patrols were considerably curtailed. Going out on October 17th Heurteaux lost his way in a heavy mist, and upon coming down very low to spy out the land, he almost collided with an Albatros that had evidently dropped down for the same reason. Before the startled German had recovered from the shock of the near collision, Heurteaux opened fire, and a five-round burst hit the German's petrol tank. The Albatros immediately blew up and a tongue of flame licked up at the Nieuport. With his left wing already smouldering, Heurteaux put his machine into a steep sideslip, and the danger of fire was past. Three days later he caught another two-seater near Le Transloy, and that, too, went down in flames.



René Dorme, Heurteaux's greatest friend and rival in "The Storks." Dorme scored 23 victories, and received only two bullet-holes in his machine in two years of war flying

Commander of "The Storks"

THREE machines fell to Heurteaux's guns during November, a Fokker on the 3rd, an Albatros on the 11th, and another Fokker on the 16th, but during the next month Heurteaux did very little flying. Commander Brocard, leader of "The Storks," was due to retire, and Heurteaux, who was to be his successor, had to devote much of his time in learning the ropes of leadership. Brocard left early in December, and Heurteaux soon proved himself to be an efficient leader, although at first he was rather too apt to neglect the tiresome paper-work and sally forth on his lone patrols.

Heurteaux celebrated his promotion to captain by destroying three machines in two days. An Albatros Scout went down in flames on the 17th, an Aviatik on the 26th, and a Rumpier on the 27th. The crew of the Rumpier were unlucky, for they died because another two-seater shot down by Heurteaux at dawn had been reported to have landed safely in its own lines and could not be counted as a victory. Going up again at 11.30 a.m.

AIR STORIES

HEURTEAUX'S VICTORY LOG

- 1 Aviatik
- 2 Rolands
- 2 Rumplers
- 4 L.V.G.'s
- 6 Fokkers
- 6 Albatri

Heurteaux caught the unlucky Rumpier a few moments before mid-day, and this time he made sure. The German observer died in the first exchange of shots, then an incendiary bullet found the petrol, and the machine burst into flames and fell in Mangues Wood. Confirmation of this victory had been sent on before Heurteaux had reached home.

But 1917 was to be a year of ill-omen for Heurteaux, for he now received bullets in his body instead of his machine. Towards the end of January a bullet went through the palm of his left hand, and thereby hangs a tale. It may be just another "tall story," but it was reported by Dorme and so deserves to be recorded. It is said that during a fight with Albatros Scouts, one enemy machine put a long burst through Heurteaux's machine just behind his back. Whereupon, with his fingers to his nose, the Frenchman made a face at the German pilot, and that worthy retaliated by shooting up Heurteaux's instrument panel, and putting one bullet through the still extended hand.

Heurteaux's Last Fight

HEURTEAUX was soon back in action, however, and on March 16th he attacked five Albatros Scouts and shot

two down in flames. On May 3rd he secured his twenty-first, and last, victory, when he shot the wings off an L.V.G. two-seater. Two days later he had been shot down seriously wounded.

With reckless abandon, he had attacked nine Albatros Scouts and was almost immediately hit in both thighs. Another bullet ploughed a furrow across the top of his scalp, and yet another passed clean through both cheeks. Half dead from loss of blood, he just managed to reach his own lines and was rushed off to hospital. Mid-August found him once more at the front, but the Fates had decreed that he should not stay long, for on September 3rd he was again shot down seriously wounded after an attack by five enemy scouts. While lying in hospital he was decorated with the Legion d'Honneur, and told that he would never fly again.

Discharged from hospital with legs spliced with silver wire and the scars of a dozen bullet wounds on his body, Heurteaux applied time and again for active service, but his superiors would have none of it. At last he was sent to America by the Minister of Propaganda, and toured all over the States, lecturing on war-flying. One wonders what American flying cadets must have thought of their own chances in the War as they looked at this bullet-shattered veteran, who was himself only a young man of twenty-five.

Like so many other War pilots, the Armistice saw Heurteaux disappear "somewhere in France," but the author believes that he is still alive. If so, let us hope that he flies once more, but in skies that hold no hint of sudden death—for of that he has had his fill.

A Great New Adventure of the Three Squadrons

THE ACE OF TWISTERS

By WILFRID TREMELLEN

Is one of the many "Star" Features In Next Month's

ENLARGED and IMPROVED

For Full Details

AIR STORIES

See Page 189

Should **GREYS** Advertising BE SUPPRESSED?



Throughout this year Greys advertising has made itself notorious by daring to burlesque the manners of some of our Big and Serious Advertisers. The public appear to have been diverted by these performances. And the Big and Serious Advertisers, to do them justice, have taken it all in very good part—convinced, no doubt, that one of the distinctions of true Greatness is to be caricatured. But, although the hand of the Law has not been invoked to

stop this irreverent campaign, stopped it is going to be. (*Sighs of relief from the B. and S. Advertisers.*) You ask us why? Simply because we've now guyed everybody worth guying. So watch this space next week.

Meanwhile, if you would like to have a copy of a souvenir booklet reproducing some of the recent Greys advertisements, fill in (and do remember to post) the coupon† below; remembering also the now famous saying—

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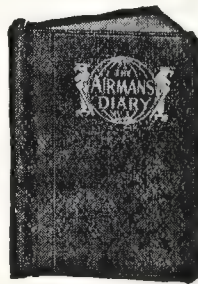
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† Or send a postcard mentioning "Air Stories."

Just Out !

THE AIRMAN'S DIARY 1938

THIS diary is a joint publication by Letts Quikref Diaries Ltd. and George Newnes Ltd. A unique and useful diary for air-minded people of all ages. A mine of information on Flying in all its different aspects.



The preliminary matter provides a useful source of knowledge and includes the following :

- Aerodromes in Great Britain.
- Aeronautical terms explained.
- Controls.
- Flying Clubs and Schools.
- Manufacturers.
- Notable flights and world records.
- Air squadrons, etc.

There are thirty-two illustrations showing the development of aircraft from the beginning right up to the powerful machines which now cover the world.

In each opening of the diary there is an illustration with descriptive matter covering a wide field of aeronautical subjects.

The size of the diary is $4\frac{3}{4}$ " \times 3".

1s. 6d.	.	.	.	.	Rexine Binding, with pencil
2s. 6d.	.	.	.	.	Leather Binding, with pencil

These diaries are on sale at all stationers and bookstalls.

GEORGE NEWNES LTD.
TOWER HOUSE, SOUTHAMPTON ST., STRAND, LONDON, W.C.2

AIR BOOKS

The Latest Books
of Aviation Interest

FREELANCE FLIGHTS

"Freelance Pilot": By Norman Macmillan: William Heineman: 15s.

IN this book Captain Norman Macmillan takes up the story of his adventurous life from the point where he left off in that fine account of his War flying experiences which he wrote some years ago under the title of "Into the Blue." The latter was a record of his experiences on the Western and Italian fronts as a member of No. 45 Squadron, R.F.C., and now, in "Freelance Pilot," he tells the little less eventful story of his life during the immediate post-war years.

Declining the offer of a permanent commission in the R.A.F. after the War, he became a freelance in civil aviation, and among his first professional engagements were the flight-testing of such now-legendary types of aircraft as the Parnall "Puffin," the Fairey "Pintail" and the Parnall "Kittiwake" flying-boat. While flying the latter at a height of some 600 feet above Cowes Bay, the entire surface of the upper wings stripped off and Macmillan's career as a civilian pilot nearly came to an abrupt end before it had properly started.

In 1921 the Riff war broke out in Morocco and the Spanish Government became an urgent customer for aircraft. Macmillan made two emotioning passages across the Guadarrama Mountains to deliver a Bristol Fighter and a D.H.4 to Madrid, and, after a brief but exciting interlude in the front line of the Riffian war, returned to Spain to assist in the reorganisation of the Spanish Naval Air Service. He arrived in Barcelona to find that the greater part of the equipment of the Service consisted of eleven British F.3 and F.5 flying-boats of Great War vintage, the wooden hulls of which had been hanging for more than a year from the lifeboat davits of two old warships in Barcelona harbour, exposed to every change of temperature and humidity. The result of this ingenious solution of the storage problem was that few of the hulls were even seaworthy, but, picking out the best and working in the open under every conceivable handicap, Macmillan set out to rebuild it, only to have it completely wrecked by a gale when within forty-eight hours of completion.

A World Flight Attempt

THE second half of the book, and easily the most interesting, is the story of the first attempt ever made to fly round the world. It began from London on May 24th, 1922, and was to be made in four stages, each with a different machine. Two D.H.9's were to be used, one for the stage from London to Calcutta, the other for the trans-continental journey from Vancouver to Montreal. An F.3 flying-boat was allocated to the North Atlantic crossing from Montreal by the Labrador-Greenland-Iceland route, and a Fairey float seaplane had been sent on in advance to India in readiness for the trans-Pacific stretch from Calcutta to Vancouver.

The expedition was led by Major Wilfred Blake, accompanied by a cinematographer and with Norman Macmillan as the pilot—a heavy enough load in themselves for a Puma-engined D.H.9 without the two extra fuel tanks, oversize oil tank and

100-lb. weight of camera equipment which had also to be carried.

A perilous forced-landing on a Marseilles race-course was successfully negotiated with only minor damage, but a subsequent series of mishaps necessitated sending to England for the second D.H.9 in which to resume the flight. Fortunately for the continuity of the film the expedition were making, the second D.H.9 bore the registration letters "G—EBDF," and needed only the stroke of a paint-brush on its fuselage to convert it to the "G—EBDE" of the machine with which they had started out!

On reaching Greece the overloaded D.H.9, with its three passengers, made the first direct flight from Athens to Egypt, a feat involving four and a half hours of continuous over-water flying. Then came the hazardous journey across the desert into Persia, and an interlude at an emergency landing-ground where the author, offered the company of a charming Arab girl, "one of the most beautiful women I have ever seen," dutifully preferred that of a dead sheep, and flew on to spend an unromantic night sleeping beneath his machine in the desert.

The Greatest Adventure

CONTINUALLY escaping disaster by inches, and with one member of the crew suffering from an injured foot and another from sunstroke, the expedition struggled on across India during the worst of the monsoon to come at last to Calcutta, and the start of the greatest adventure of all.

The D.H.9 was abandoned and, with the leader of the expedition in hospital with appendicitis, the author and Malins, the cameraman, set out in the Fairey 3C. seaplane to fly across the Bay of Bengal to Akyab. A few hours later they were forced down by a raging gale and for three days and nights were marooned off an island mudbank, their only diversion being the author's attempts to explain to a wondering native exactly why they were going to such extraordinary trouble and hardship in order to fly from London—to London.

Temporary repairs effected at last, they took-off to complete the crossing of the Bay—and within fifteen minutes were down again on the water. Unable to fly, they taxied for hour after hour across the open sea towards the nearest mainland until, their petrol exhausted and a storm coming up, the seaplane capsized.

The author's account of how for the next three days they remained adrift in the Bay of Bengal on the wreck of their upturned seaplane, without food or water, surrounded by sea snakes and sharks, burned black by the sun and with wounds festering from salt water, makes a grimly memorable ending to this epic story of a pioneer flight as daring in conception and as brave in execution as any in the annals of British aviation.

ALL ABOUT AVIATION

"Your Wings": By Assen Jordanoff: Funk and Wagnalls: \$2.50.

WITHIN the covers of this book is imparted more precise yet easily-grasped information about flying than is usually to be found in half-a-dozen general

AIR STORIES

books on aviation. It is the work of a well-known American airman, a former War-time "ace" of the Bulgarian Flying Corps, and though he makes extensive use of peculiarly American flying terms they are all now so familiar in this country as to present no difficulty to English readers.

With the aid of some 425 technically-accurate drawings, the author first makes clear the basic principles of flight, then, step by step, takes the reader through a comprehensive course in flying instruction from the first flight to blind flying and aerobatics. This "tabloid" method of instruction affords a rapid grasp of the subject, and even the functions and working principles of such complicated instruments as the radio compass, the directional gyro, the automatic pilot and the artificial horizon become obvious at a glance.

The publishers credit the author with having incorporated in this book everything about flying that can possibly be taught by word and picture, and if this is rather too high a claim for anyone but a publisher to make, it may at least be agreed that this book probably comes nearer to achieving it than any yet published.

AIR POWER

"The Royal Air Force": By Air Vice-Marshal E. L. Gossage: William Hodge & Co.: 2s. 6d.

THIS highly-topical little book is based on a series of lectures on Air Power which the author delivered at London University, and deals with the contribution of the Royal Air Force to our national security.

It traces the development of Air Power from the epoch-marking day in July, 1917, when the first daylight air raid was launched on London, and goes on to discuss aviation's part in conjunction with naval and military operations and in the defence of our coasts. Subsequent chapters deal with the rôle of Air Power in the defence system of the Empire and in the present-day methods of safeguarding the British Isles against aerial invasion.

Naturally so wide and complex a theme cannot fully be dealt with in the scope of four lectures, but this book serves admirably as an introduction to a subject of which every taxpayer, and certainly every member of the rising generation, should have, at least, a sound general knowledge. And certainly there can be few men better qualified to write of the R.A.F.'s contribution to the defence of England and the Empire than Air Vice-Marshal Gossage, who, after extensive administrative experience of the Royal Air Force overseas, is now, as the Air officer commanding No. 11 (Fighter) Group, in charge of those fighter squadrons upon which the Empire's capital would largely rely for its defence in the event of aerial attack.

ACES OF FRANCE

"French War Birds": By "Vigilant": John Hamilton: 8s. 6d.

A COMPANION volume to the same author's "German War Birds," this is an enthralling account of some of the greatest, as well as some of the lesser-known, airmen who achieved "ace-hood" in the French Air Service during the Great War.

To a large extent the stories of the French "aces" must be the history of that famous French scout squadron, Les Cigognes, or "The Storks," for

at one time or another the names of most of France's greatest air fighters were to be found on the roster of this squadron.

In the several chapters which he devotes to "The Storks," "Vigilant" gives an intimate picture of the daily life of this great fighter unit, describing manners and customs altogether different from those that obtained among British and German airmen. Against this realistic background, there come to life again the historic figures of such heroes as Nungesser, "somewhat pompous in manner, and likes to advertise himself both in the air and on the ground," and who "has a plate in his head and a false roof to his mouth, which makes him speak queerly"; Duellin, "a typical cavalryman," who does not care how close he approaches an opponent and who delights in telling of the occasion when he came so near that "the German pilot's blood splashed his windscreen"; Pere Brocard, the "King Stork"; the delicate Guyenner, and a host of others no less famous.

Nor were Frenchmen the only ones to bring fame to the records of Les Cigognes, for, more cosmopolitan than the R.F.C., the French Air Service accepted foreigners of almost any nationality, provided their credentials were satisfactory. Thus, among "The Storks," there were a Japanese, Baron Chigueno; two Russians, Brodowitch and Krutaigne; a Chinaman, Tsu, who scored four victories, and Frank Baylies, an American and a former member of the Lafayette Squadron.

Réne Fonck, Pierre and Jean Navarre and Roland Garros—the exploits of each one of whom would provide sufficient material for a book more exciting than any fiction—are all dealt with at length, and their human weaknesses no less than their amazing skill and courage in action are well described. The result is a fascinating work that probably gives a better idea of War-time conditions in the French Air Service and a more intimate picture of the airmen whose names are now emblazoned in French history than any other book yet published in this country.

MORE THAN A DIARY

"The Airman's Diary, 1938": George Newnes and Letts Quikref Diaries Ltd: 1s. 6d. and 2s. 6d.

THE 1938 edition of this popular diary has been vastly improved by the addition of a number of new articles to the preliminary matter, and the introduction of a 16-page photographic section showing the development of British aircraft from the time of the Grahame-White box-kite up to the present day.

The new matter includes articles on How to Join the R.A.F., a List of Air V.C.'s, and a Short History of the R.A.F. There are also all regular features of previous issues, such as the lists of R.A.F. Squadrons, Notable Flights and World Records, Flying Clubs and Schools, Aircraft and Engine Manufacturers, all of which have been brought right up-to-date. Altogether, a unique and constantly useful diary for air-minded people of all ages.

BOOKS RECEIVED

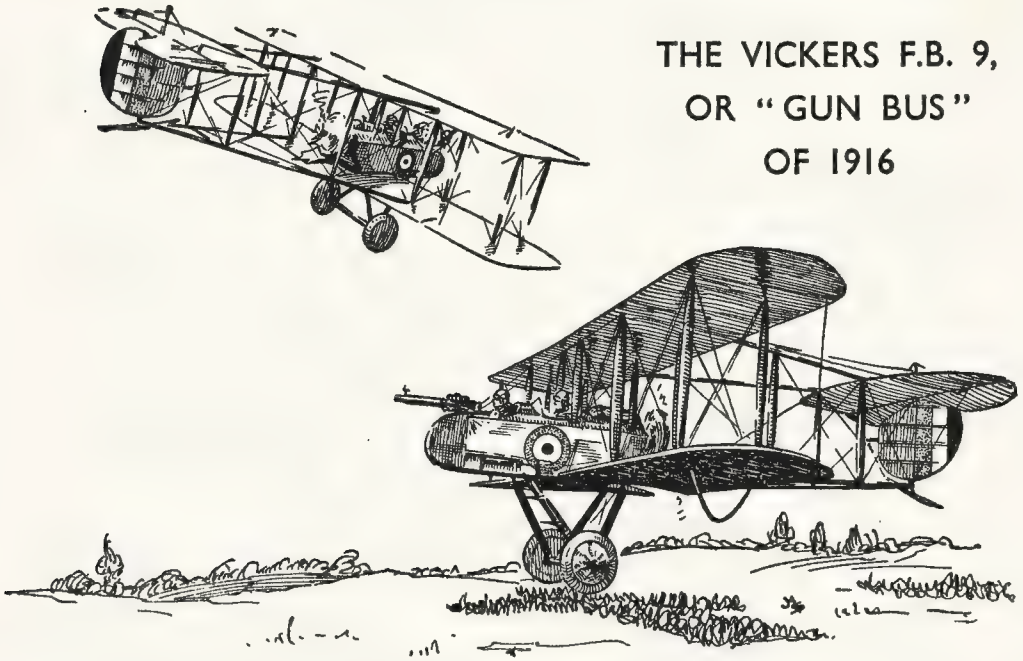
The following new books will be reviewed in a subsequent number:—

"I Wanted Wings." By Beirne Lay. Chapman & Hall, 10s. 6d.

"Air War." By W. O'D. Pierce. Watts & Co., 2s. 6d.

Father of the Fighters

THE VICKERS F.B. 9,
OR "GUN BUS"
OF 1916



**The Story of a Pioneer Type of British Fighter, with
Full Instructions for Building a Scale Model**

By JAMES HAY STEVENS

BEFORE the Great War, and even during the early months of hostilities, little attention was paid to defensive armament on aircraft. One or two isolated experiments had been carried out—such as the Short "Gun Carrier" seaplane—but the only serious effort, so far as the R.F.C. was concerned, was the Vickers "Gun Bus," which was produced in 1914 before the outbreak of the War. In its original form it was known as the F.B. 5, and after passing through extended military trials with flying colours, it was ordered in quantity by the R.F.C. It was a very good aeroplane for its day, and several examples of it remained in use until as late as March, 1916.

A year of war experience with the F.B. 5, however, resulted in the appearance, in December, 1915, of an improved version, the F.B. 9 "Gun Bus," and,

although the Constantinesco gun-gear was soon to render the pusher obsolete, ninety-five F.B. 9's were built for the Royal Flying Corps.

The new "Gun Bus" was very similar to the earlier one. A complicated under-carriage with skids had given place to a plain "vee," and wing-tips were rounded instead of square. Raf wire bracing had replaced cables, and an improved form of gun mounting had been evolved.

Typical War-time Construction

STRUCTURALLY, there was nothing outstanding about the "Gun Bus,"—it was typical of its day. The wings were spruce-framed and covered with fabric. All interplane struts were of spruce spindled to a streamline section. A point of interest to modellers, which does not show clearly in the G.A. Draw-

AIR STORIES

ing, is that the struts of the inner bay are considerably deeper in section than the outer ones.

The nacelle was of a rectangular cross-section with a rounded fairing on the top decking. The observer, in the front cockpit, was armed with a Lewis gun on a special mounting, whereas in the F.B. 5 an ordinary belt-fed Vickers gun had been used. On the sides of the nacelle outside the observer's cockpit, there were two wooden walkways, placed over the rudder control cables. The pilot's cockpit was raised slightly above the observer's, and full dual controls were provided. At the rear of the nacelle, a cylindrical petrol tank was mounted in the top decking. The engine was a 100 h.p. Gnome nine cylinder rotary, the type which had been used with such success on the F.B. 5.

The tail assembly was carried on four steel tube booms, spaced vertically by four spruce struts. The side bays were braced by Raf wire and there was also

certain cross-bracing in plan, which may be seen in the G.A. Drawing. The tail-plane, elevators, fin and rudder were all extensively braced by streamline wires.

The "vees" of the undercarriage were of steel tube, with light wooden streamline fairings. These "vees" were cross-braced, in the plane of the rear struts, by streamline wires. There were also two metal steps for the crew on the front leg of the left-hand "vee."

Performance Details

DETAILS of the dimensions and performance of both the F.B. 5 and the F.B. 9 were as follows :

	F.B. 5	F.B. 9
Span . . .	36 ft. 6 in.	33 ft. 9 in.
Length . . .	27 ft. 2 in.	28 ft. 6 in.
Weight, empty . . .	1,220 lb.	1,160 lb.
Weight, loaded . . .	2,050 lb.	2,000 lb.
Military load . . .	400 lb.	440 lb.
Fuel capacity . . .	4 hours	4 hours.
Range (still air) . . .	330 miles	360 miles.
Speed at 5,000 ft. . .	70 m.p.h.	80 m.p.h.
Landing speed . . .	41 m.p.h.	47 m.p.h.
Climb to 5,000 ft. . .	16 mins.	15 mins.
Ceiling . . .	9,000 ft.	10,500 ft.

HOW TO BUILD THE SCALE MODEL

Details of Materials, Tools and Constructional Methods for Building a Solid Scale Model

REPRODUCED on the opposite page to a $\frac{1}{2}$ nd scale is a General Arrangement Drawing of the Vickers F.B. 9. The list of materials which follows, and the dimensions shown on the sketches, have been calculated to the same scale, which is the standard one that has been used throughout this series. If, however, some other scale is preferred, the G.A. Drawing (or, at the very least, the side elevation) should be re-drawn to the full size of the desired scale.

Materials and Tools

FOR the guidance of those who are new to modelling the requisite materials, and their approximate sizes, are : a block of wood $1\frac{3}{4} \times \frac{1}{2} \times \frac{1}{2}$ in. for the nacelle ; a sheet of plain fretwood $6 \times 3\frac{1}{2} \times \frac{1}{8}$ in. from which to make the wings and tail-plane ; a piece of fibre $3 \times 3 \times \frac{1}{16}$ in. to make the rudder and some odd parts ; some 2 ft. of 20-gauge brass wire for

interplane struts, tail booms, etc. Wheels and airscrew may be bought from a model dealer, or the modeller may refer to back numbers of AIR STORIES for full details of how to make them himself.

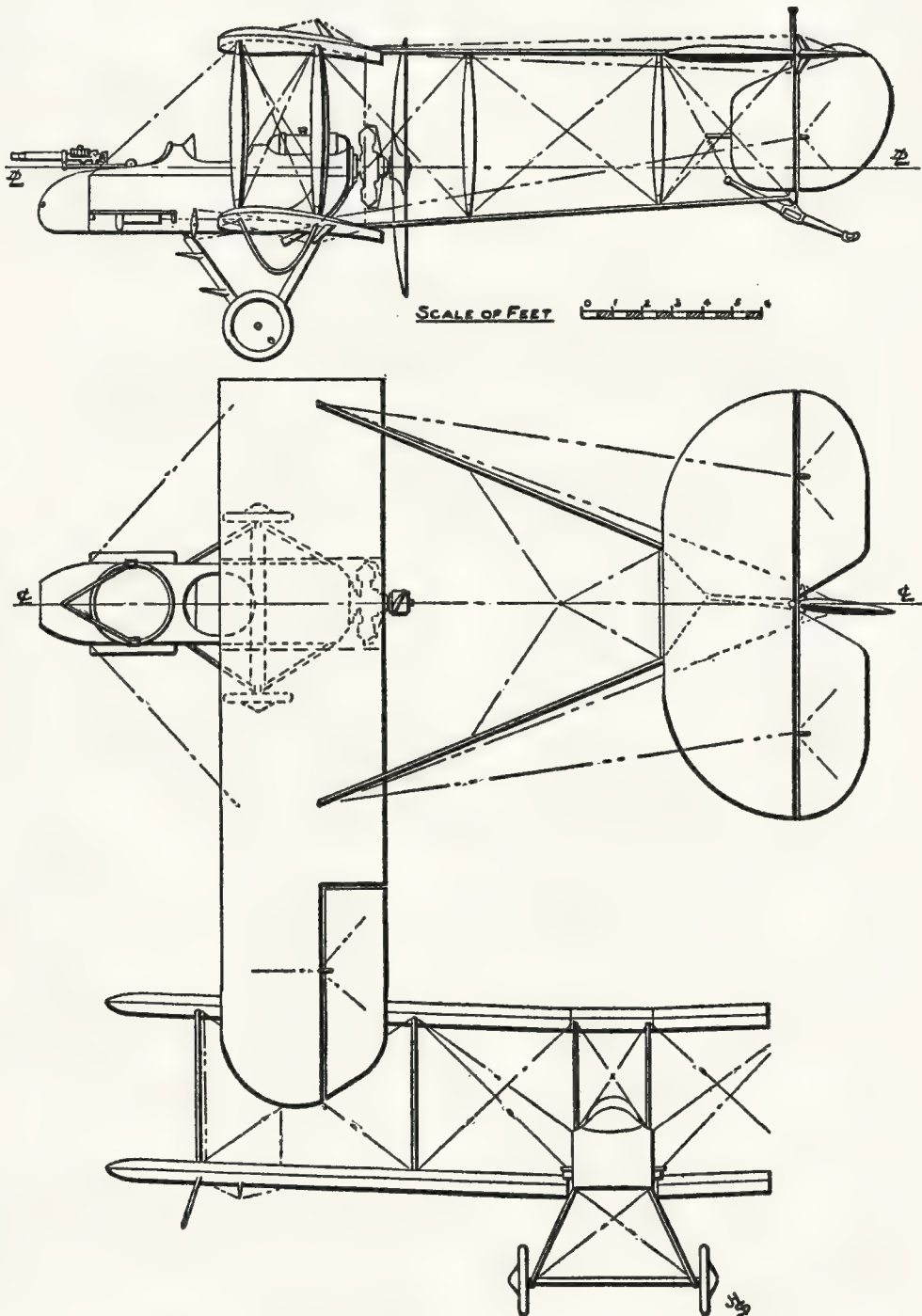
The following tools will be found essential : a $\frac{1}{4}$ -in. chisel ; small plane ; penknife ; oilstone ; small half-round file ; $\frac{1}{16}$ -in. bradawl ; archimedean drill ; fretsaw ; small long-nosed pliers ; plastic wood (this is actually a "material," but, owing to the time a tube lasts, it may be considered as a "tool") ; a tube of cellulose glue ; a light (wireless type) soldering iron, flux and solder ; a penny ruler measuring in $\frac{1}{10}$ ths, $\frac{1}{12}$ ths and $\frac{1}{16}$ ths of an inch.

Method of Construction

TRACE the outline of the nacelle, place the tracing on the block of wood, pin-prick the outline, and then mark it in with a pencil. Next, cut off the surplus

FATHER OF THE FIGHTERS

THE VICKERS "GUN BUS"



A General Arrangement Drawing, showing three view plans of the Vickers F.B.9 Fighter

AIR STORIES

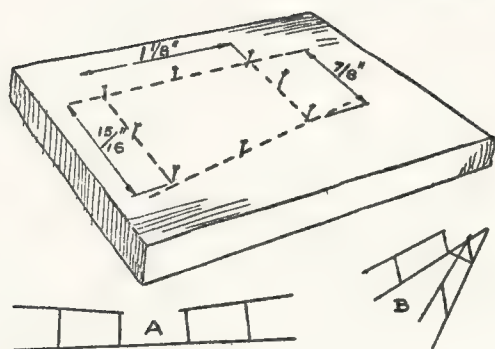


Fig. 1.—The tail-boom jig, showing dimensions and method of bending the complete assembly to shape

wood, draw a centre-line down the lengths of the top and bottom surfaces of the block, and also draw the plan of the nacelle. The surplus wood is again removed, the top decking of the fuselage rounded and the cockpits hollowed out. The machine-gun, engine and airscrew are best bought from a model shop, and can be fitted to the nacelle on completion of the model. Now make the holes for centre-section and undercarriage struts.

The tail booms are prepared on a jig, as shown in Fig. 1. The correct positions for the booms and uprights are drawn carefully on a piece of heavy board, and light nails or "gimp" pins are driven in to keep the various wires in place. The wires are cut to length, cleaned, tinned at the approximate positions of the solder joints, slipped into the jig and soldered. The wire forming the lower boom is in one length; the uprights and upper booms for each side are soldered to it while it is in one straight piece. After soldering the other parts, it is bent to a "vee" shape at its exact centre (see Fig. 1 A. and B.).

The main planes—their outlines having first been drawn on a sheet of wood—are now cut out with the fretsaw. The upper wing is made in one piece; the lower in two separate pieces. The correct cambered section is obtained by careful work with a wood-plane and glasspaper. The outlines of the ailerons are scored in with a ruler and bradawl.

The tail-plane and elevators are made as one unit from wood. The fin and

rudder, again made as a single unit, are best cut out and shaped from ordinary red fibre, such as is used in garages for making washers.

Undercarriage "vees" are made from lengths of brass wire, bent to form loops for the axle. Interplane struts are plain lengths of wire. The "vees" and the interplane struts can be faired by folded strips of paper (see Fig. 2) glued to their lengths, and in this respect it is worth noting that the inner pair of interplane struts are noticeably deeper in section than the outer ones.

Method of Assembly

THE upper plane may be given its correct dihedral angle by heating over a candle and then gently bending between finger

Fig. 2.—Paper fairings in place on an interplane strut and undercarriage "vee"



and thumb. In Fig. 3A are seen details of the way in which the lower planes are attached to the nacelle with wire or pins. Note, also, that there is a $\frac{1}{16}$ th in. gap between the inner ends of the planes and the sides of the nacelle. Glue the lower planes firmly in place; then fit the interplane struts, centre-section struts and the top plane, without glue, and adjust them until the gap and alignment are correct. Then, and then only, should the whole be glued together.

The tail-booms have now to be fitted. Fig. 3B shows how the ends of the booms

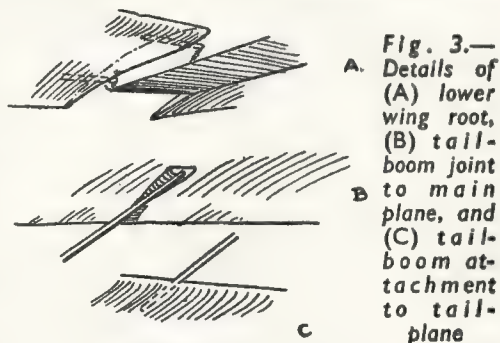


Fig. 3.—Details of (A) lower wing root, (B) tail-boom joint to main plane, and (C) tail-boom attachment to tail-plane

FATHER OF THE FIGHTERS

fit into gouged slots in the planes. These slots should be made before assembly and holes pierced for the booms, the tips of which will enter more easily if they are sharpened with a file. The rear ends of the upper booms are fitted to holes in the leading-edge of the tail-plane (see Fig. 3C). A pin is fitted into the top of the fin—this is a king-post for the tail-plane bracing—and another to its leading-edge, as shown in Fig. 4.

Having soldered the booms and up-rights, even the newcomer to soldering should not be afraid to make the tail-skid of brass wire, shown in Fig. 4, and then to solder it to the tail boom. When this has been done, the fin is gently forced on to it and its upper end glued securely to the tailplane. Lastly, the cross strut between the lower booms at the bottom of the rear upright struts is also soldered in place.

After this work, the undercarriage will practically fit itself; though care should be taken to see that it is neatly aligned. The engine, airscrew, Lewis gun, wing-tip skids and other details are then fitted to complete the assembly of the model. The many bracing wires and various control cables are best fitted after the model has been painted.

Painting Instructions

THE "Gun Bus" in the foreground of the heading sketch was painted all over with clear dope, except for some light grey paint on the top and nose of the nacelle. Struts were varnished spruce, and the tail booms and undercarriage struts were black. The wheels were silver, the engine polished steel (best represented by dark grey paint), and the airscrew varnished mahogany. The cockades were like those of to-day, although the rudder was painted with red, white and blue vertical stripes—the red being aft.

The colouring of clear doped fabric is best represented by light cream paint, although this is not completely satisfactory as the original was translucent and

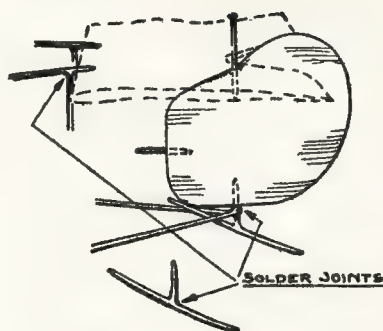


Fig. 4.—Details of the tail assembly

allowed the shadow of the framework to shine through. On active service some of the machines received silver or green dope, but the majority retained the clear dope. For the benefit of those who like their models to be exact in every detail, the serial numbers of all the F.B. 9's in service were: 5271 to 5290, A1411 to A1460 and A8601 to A8625.

Small 3d. pots of enamel, a No. 5 sable brush, a small liner's brush and some transfer cockades constitute the materials for painting. The transfers, which can be bought from a model shop for a few pence, will be found to save much arduous painting work. Apply the paint evenly and thinly, and allow plenty of time for it to dry between coats.

Fine florist's wire is used for the bracing and control wires; these are differentiated on the drawings by chain lines for the former and double chain lines for the latter. Cut the wires dead to length, without any kinks in them, offer them up with a pair of tweezers or wireless pliers, and fix them with small spots of cellulose glue at each end.

PRINCIPAL DIMENSIONS OF THE VICKERS F.B.9

Span	33' 9"
Length	28' 6"
Chord	5' 6"
Dihedral	1½°
Incidence	3°

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LINE-SHOOTER

Catching a Big Fish, it seems, is Chiefly a matter of Fishing in the Right Spot with the Right Tackle

By REGINALD SUNNUCKS

FLIGHT LIEUTENANT RAWSON SYMES was wet through and tired almost to the point of exhaustion. Furthermore, he was angry with himself, for he had just made a bad landing. Nothing was strained or broken, but the big flying-boat wallowed in the short, choppy sea. With her engines ticking over, she swung slowly into wind.

Symes eased his feet from the rudder-bar and rubbed his knee. His right leg was completely numb and had to be smacked into life. For six hours he had been pushing his foot on the rudder-bar to keep his gigantic machine from yawing to port, and his leg had gone to sleep.

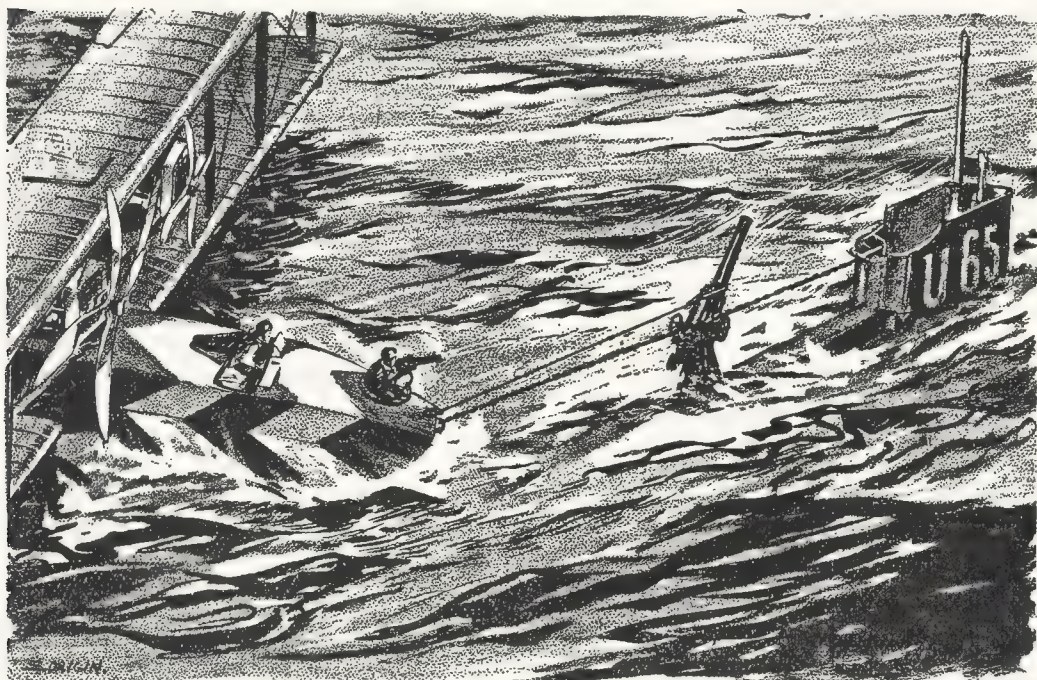
"A rotten trip!" exclaimed the observer from the front cockpit. There was a scornful tone in his voice.

"Yes," agreed Symes, "and a rotten landing, too. Better come aft while I taxi in."

The engines throbbed and the machine crabbed slowly towards the slipway. Sheets of salt spray swept like razor blades into the cockpit until the pilot gasped for breath. Felixstowe was certainly not living up to its reputation for balmy air and warm sunshine on that October evening in 1916.

At the slipway, the big, unwieldy boat was handled by a wading party. Lines were thrown, sharp orders rang out, and almost imperceptibly the huge F.2A. was hauled up to the tarmac.

"Hello, Symes," greeted a chorus of cheery voices as he entered the mess followed by his observer, Billy Rowley.



There was a sudden swirl on the water and the long grey submarine broke surface

AIR STORIES

"Have you seen anything?" everybody asked anxiously.

"Not a thing," growled Symes, looking around him.

"Not a goddam thing," added Rowley, flicking a length of cord like a cowboy swinging his lasso. Billy Rowley was a Canadian, and he was never without his cord, with which he practised all kinds of tricks, often to the discomfiture of the mess.

Symes gave his observer and his rope a look of disapproval and strode farther into the group.

"I'm fed up," he said bitterly. "For months we've been going over and over the same area, and not once have we got even a glimpse of an enemy submarine."

"The same here," shouted another pilot, "I'm fed up, too. I think I'll try and get transferred to a scout squadron."

"Fritz is somewhere on our beat," an older pilot said assuringly. "Ships are being sunk every day."

"But who the devil can see him?" asked Symes. "Look at the fog and the drizzle. Why, it was as much as I could do to see England, let alone a submerged submarine."

"Yes, yes," agreed the older officer. "I admit it has been pretty bad lately, but if you want to catch anything you must first understand its little ways. For instance, you would never think of taking a trout line to Landguard Point. Cod is more the kind of fish you expect to find there."

"Well?" enquired Symes, and then, turning sharply round to his observer, he called out, "For the love of peace, Billy, put that rope down. It gets on my nerves."

Billy had neatly lassoed a steward, but nobody seemed to be in the humour for tricks, however clever. Besides, as one officer remarked, "Our drinks might get upset."

Billy consented to be good, and the older officer went on with his advice. "Why not pay a visit to our submarine chappies?" he said. "Their depôt ship is only a mile away, and they'll give you some very useful tips. Then you can go fishing in the right spot with the right

tackle."

The suggestion meeting with general approval, it was decided to make the visit forthwith.

H.M.S. "MAIDSTONE," with an ex-liner called the "Pandora," was the home of the submarine contingent. These ships were permanently secured to the quay at Harwich, and alongside lay their slim, sleek charges. There was always plenty of bustle on the ships; officers coming and going on leave; submarines shoving off and arriving; crews in clean white sweaters and sea boots tumbling into their ships, and other crews coming aboard in dirty, oily jerseys after a two weeks' hard patrol. There were liberty men in Number Ones, all inspected and ready for leave, staff officers with code books tucked under their arms, and Royal Naval Reserve navigators carrying rolls of charts. And at the gangway there was a soldierly figure, erect and vigilant—the corporal of Marines.

"Blimey," that sentinel muttered, as he caught sight of the advancing group of R.N.A.S. officers. "Look what's arrived."

"Air Service officers," said the Quartermaster. "Bet there'll be a party here to-night."

The guardians of the gangway pulled themselves together to receive the Air Service and, a few minutes later the visitors' arrival in the wardroom coincided with the signal to "push the boat out" in traditional style.

There was a babel of conversation, loud and merry. True, some of it was shop talk, but mostly it drifted into a discussion on navigation in London, special point being given to the perils in the vicinity of Shaftesbury Avenue. Nobody struck a serious vein, and the Bing Boys had a far more prominent place than the interminable War.

Rawson Symes, keen as mustard, but with much arduous toil as yet unrewarded by the sight of a submarine, was impatient to get on with the real object of his visit.

"Give us a song, Sinbad," the crowd shouted to a Royal Naval Reserve

LINE-SHOOTER

lieutenant.

"Can't," replied Sinbad. "I must go down and decode this signal. Shan't be long."

"Are you going down into your sub.?" Symes enquired eagerly.

"Why, yes," said the Reserve man as he pushed his way to the door.

Symes saw his opportunity.

"Can I come with you?" he asked, shouting to make himself heard above the din of a piano which had just started up.

"Yes, if you like," replied the lieutenant, "but it's a rotten night outside."

"O.K.," cried Symes, and, stepping out into the alleyway, he followed the Reserve man.

Down an iron ladder with a clattering iron chain handrail and through a seamen's mess-deck, they passed to a bulk-head door. An icy blast of wind struck them as they found themselves at the top of a gangway which led through the ship's side, down to the submarines.

"Careful here," warned Sinbad, as he led the way. "My boat's the second over."

Symes gripped the taut lifeline, and made his way slowly down the gang-plank. The cold air made him shiver slightly, and he saw that there were four submarines in this trot.

They had to enter Sinbad's submarine through the conning-tower, as the torpedo hatch was closed. Everything was spick-and-span, but there was no burnished brass here. The hatch through which they now descended looked like a manhole leading to a sewer. Down they went, lower and lower—much farther than Symes had expected. Then suddenly his eyes were dazzled by brilliant lights and a mass of highly polished machinery. Symes felt much as an ant must feel in the bowels of Big Ben.

"The control room," explained Sinbad. "This portion is the wardroom and chartroom. The skipper has the bunk, and I sling a hammock here."

Symes was flabbergasted, he had expected to find far more space and greater comfort than this. His companion brought out his keys and opened a safe.

He slapped two heavy code-books on the table and began to scan a few pages.

"Nothing important in the signal," he announced. "Just routine corrections to charts. It'll keep till to-morrow." He put the whole lot back in the safe and slammed the door.

"WHAT'S your biggest danger?" Symes asked, anxious to hear and learn something about his job.

Sinbad thought for a moment. He chose his words carefully.

"Well," he replied, at length, "to be truthful, depth-charges and aeroplanes."

"Aeroplanes?" repeated Symes with surprise. "Why, I've been hunting submarines for three months and haven't seen one."

"No, but I'll bet they've seen you through the skyscraper periscope," Sinbad told him, smiling.

Symes was interested, but puzzled. "I don't understand," he admitted. "If they see me, why can't I see them?"

Sinbad smiled, jerked out a sliding table, and produced pencil, chart, and dividers from a drawer.

"Now," he began tapping his pencil on the chart. "A submarine can, when she is in good trim, dive at the rate of about a foot in two seconds, and it's twenty-five feet from the conning-tower to the water-line. In other words, she can get under pretty quick. But once under the water, her maximum speed is only about three knots. Of course, she can really do more than that, but if she does the battery runs down at such a speed that she could not keep it up for more than two hours. And then it would take about ten hours to re-charge."

"Re-charge?" enquired Symes.

"Yes. We can only re-charge when on the surface with the oil engines running. On the other hand, we can knock up about fourteen knots on the surface."

"I'm beginning to understand," said Symes, pleased with Sinbad's enlightening explanation. "Actually," he commented, "the aeroplane really keeps the submarine under—in fact, more or less pinned to one spot."

AIR STORIES

"That's exactly it," replied Sinbad, happy in the thought that he was telling a flying officer something he didn't know. "You see, in a submarine, our method when attacking is to get ahead of the target when we are still on the surface. Then we dive and wait till the enemy comes within range. Then we let go the torpedo. You see, we in the submarine being smaller and therefore less visible, can see the larger ship long before she spots us."

"Obviously," agreed Symes, "and that's where the aircraft comes in. So we really are doing some good in keeping submarines down?"

"Certainly," Sinbad assured him. "You flying blokes are foiling attacks all the time."

"I badly want to bag a Fritz," said Symes. "I want to know their little ways, so that I can tackle them myself."

Sinbad emptied his pipe in an ashtray, refilled, blew a thick cloud of smoke into the air, and pointed to the chart.

"Fritz generally has a big area to cover," he went on. "You very seldom find two of their boats working together, except when coming or going to a job. His life is pretty tough, and bad weather puts him out of action. Remember that. He either runs for shelter or lies doggo on the bottom. If there are high seas, his torpedoes are useless except at very close range. So keep your eyes open for sheltered waters during very bad weather—sheltered waters and lee shores."

"Would he anchor?" enquired Symes.

"No, he wouldn't. He'd be ready to do a crash dive."

Sinbad looked at the clock and thought of the sing-song in the mother ship.

"Let's get back," he said impatiently. "Why talk about this old war while the fun is on?"

He led the way, followed rather reluctantly by Symes. Up the dark conning-tower, on to the superstructure, and over the gangplank, and they were soon back in the mother ship.

There was no difficulty in finding the wardroom. You could hear it miles

away. They were all singing with terrific gusto, "Let the great big world keep turning," the while Billy Rowley was doing stunts with his lasso. He lassoed wine glasses, chairs, and even junior officers, and he wound up by spinning the rope into a circle and skipping in the centre.

Then there was another song. Sinbad won tremendous applause for a sea shanty, and then Billy insisted on a grand finale. He button-holed the Commander. Symes knew what was coming.

"No, sir," he called out to the Commander, "don't take part in this trick, please. Billy, you villain, stop this nonsense. You can't play that trick on the Commander."

But the Commander was quite game, and the Canadian, egged on by the Paymaster, persisted.

"Now, sir," he said in true showman-like style. "Take off your jacket. Now raise your chin, and look well at the ceiling. Watch for my rope, and see it stand straight up like a stick. That's it, sir. Your head just a little higher."

The Commander laughingly obeyed all instructions, and stood with head well back waiting for the rope.

Billy then produced a funnel, inserted it in the top of the Commander's trousers, seized a jug of water, and poured the contents into the funnel.

There were roars of laughter, and the Commander hurried off to change his pants, while the Air Service bade their hosts good-bye.

TWO days after Symes' visit to H.M.S. "Maidstone" he received orders to do a long patrol.

His machine taxied out in biting wind, rain and sleet. The big boat bumped on the tops of the angry waves, throwing drenching spray over the open cockpit; then slowly she turned into wind and took off with a mighty roar.

Symes quickly decided it was no use climbing through the clouds, which were only at a thousand feet. Their job was to spot submarines, and to do that they had to keep within sight of the white-crested waves.

LINE-SHOOTER

His observer, Billy Rowley, was busy with charts, maps and courses. The first track took them to a position close to the Belgian coast, then up near the Dutch three-mile limit to the Terschelling lightvessel, very close to the German coast.

The weather became steadily worse as they flew, and soon they were forced down to within five hundred feet of the water. Big ships, tramps with Swedish colours painted on their sides and sleek English destroyers, seemed to loom up out of the mist, pass underneath, and then were lost in the greyness astern.

"A waste of time," muttered Symes. "If we did spot something, I don't suppose we could do anything about it. Bet the visibility isn't much more'n two miles."

Suddenly a lightvessel sprang into view.

"The Terschelling!" shouted Billy from forr'ard. "You can alter course due West now."

"Right," Symes waved his hand, and the big boat turned ninety degrees into the teeth of the westerly gale.

For two hours Symes struggled with the controls. "There must be a kink somewhere in the hull," were his thoughts, as he applied pressure to his starboard rudder-bar to overcome a persistent tendency to yaw.

Nothing appeared in the dull, grey-green view that spread out before him, not even a small ship. The engines throbbed with dull monotonous beat. Presently his mind began to wander away from his duty of spotting submarines.

For a minute he was back in the ward-room of H.M.S. "Maidstone"—then in Submarine No. —.

"—E-65. That's it," he said aloud. "Sinbad and Submarine E-65."

Then he remembered Sinbad's words about torpedoes not being able to run in high seas—and that subs. would seek sheltered waters in a gale.

At that moment Billy Rowley stood up in the front cockpit.

"We ought to sight the English coast in about fifteen minutes," he shouted.

"Then we steer South for home."

"Right," Symes replied with a growl. He was fed up with the North Sea.

In due course, England loomed up, looking grey, green and damp.

"Steer South," shouted the observer, but Symes drove straight on towards the shore. Quickly he dropped to nearly two hundred feet and started to hop over headlands, skim small bays and dive into small gullies, but always keeping a good look-out in these sheltered waters.

He had just remembered that the east coast of England was a lee shore during this westerly gale.

"What's the game, Buddy?" shouted the Canadian. "This old kite ain't fit for hedge-hopping."

Symes smiled; he was enjoying himself after that long grind over the North Sea.

Then, suddenly, he spotted a submarine. It was just over in the next bay; there was only the headland between them.

"One of ours," shouted Billy. "Old Sinbad's—look, her number is 65."

Symes decided to give Sinbad a shock. He stuffed his nose down till the air speed showed 150 knots. The headland hid his view of the submarine as he lost altitude, and he seemed to drive straight for the cliffs. Quickly he pulled the stick back, and the huge flying-boat climbed steeply, like the uphill thrill of a switch-back after a long, sharp descent.

The aircraft pulled over the neck of land by a few feet. Then without warning Symes shut his engine off and, in full view of the submarine, glided down to land—a matter of two hundred feet.

The huge flying-boat touched the water gracefully, less than three hundred yards from the submarine.

"Holy smoke!" shouted Billy. "It's a Fritz—U-65."

SYMES released his controls as the machine stopped and slewed gently to the gusty breeze. For a second he stared at the fully-blown submarine. There was no doubt about it. Her number was U-65—Sinbad's was E-65.

AIR STORIES

The submarine started to glide ahead, and two men, one an officer, jumped from the conning-tower to the forward gun. It was at that moment that Billy's Lewis gun started to spit.

"Phut-Phut! Phut!!" it snapped, and the two submarine men dropped near the gun. Symes quickly noted that the submarine's conning-tower was now deserted, also that her nose was slightly down. He gave his engines a burst and taxied closer. He did not know why—it was useless to try and ram her, he was bound to come off second best—but he taxied closer till he was practically touching the deserted superstructure of the now diving submarine.

"Go on," shouted Billy. "Closer."

"What's the good?" Symes pushed the nose of the flying-boat closer.

"Closer!" The excited Canadian was whirling a rope over his head. Round and round it went, then shot out straight for the gun. The lasso neatly fitted over the muzzle of the wicked-looking 4.1, and as the submarine quietly slid under the water, Billy quickly paid out his long line, securing the end to the forward bollards.

"Shut your engines off," he shouted to the pilot. "Quick—shut your engines off!"

Symes obeyed, and for a moment the big flying-boat swung idly to the breeze. Then there came a sudden shout from one of the crew in the after cockpit.

Symes turned aft in time to see his mechanic drag a German officer, who had been washed from the superstructure of the diving submarine, into the after cockpit of the flying-boat.

"He's only slightly wounded, sir," the mechanic shouted.

Next moment the flying-boat jerked suddenly forward as the submarine, having taken up the slack of the rope, began to tow the aircraft, like a diving whale towing the harpoon whalers.

The Canadian looked worried.

"Hope she don't go too fast, or my line'll break," he shouted.

"She can only do about two knots under water," Symes stated with authority, "and she's hardly doing that now."

"No," agreed the Canadian, "but I think we'd better get some help, all the same. She can't sink us, I know, but then we can't sink her either."

"Umph!" agreed Symes. "We'll see a trawler or something presently. Will the rope hold?"

"Yes," came the reply. "That's if she doesn't go more than three knots—or tow us under another ship."

For a few moments the two men looked at the tow rope, and realised that if it broke their chance would be lost.

"She's easing up." The Canadian pointed in the direction of the submerged submarine. "Dammit, I think she's stopped."

"Yes," Symes agreed. "She's stopped, and we're plumb over her. Drop the anchor over and see if you can hook on to her superstructure."

THE anchor went overboard with a splash and the chain was smartly paid out. The breeze became stronger and the huge flying-boat swung and pulled strongly on the tow rope and chain, indicating that the anchor had gripped something.

"If she's stopped," Symes stated, "she must be on the bottom. A submarine can only stop on the surface or on the bottom. At any other depth she must have a small amount of headway to work her hydroplanes."

Suddenly, there was a great swirl on the water; the chain and tow rope jerked ahead. A periscope appeared, and the swirling of the water increased till it became churned into white foam. Then the long thin grey submarine broke surface. With her surface engines she was already doing eight knots. But no one appeared on her decks.

Without waiting for orders, Billy Rowley brought his machine-gun into action and poured a stream of lead into the conning-tower and periscopes.

"Stop!" shouted the pilot. "It's no use wasting ammunition, that conning-tower's bullet-proof."

"O.K.," came the reply. "But she's steering a funny course. We're pretty close to the land and she's steering

LINE-SHOOTER

straight for it."

Suddenly the submarine's speed eased. The churning sea became very brown, and slowly she came to a stop. U-65 was aground.

"Hi, we're aground!" the Canadian shouted.

"Yes." Symes took a quick look at his chart. "On a sandbank, and the tide isn't half out yet."

THE end was near. The surface Navy appeared from nowhere—trawlers, motor-boats, destroyers, etc., but they could only look on; the water was too shallow to approach nearer than shouting distance.

The tide continued to ebb, and very

soon both the submarine and flying-boat were left stranded high and dry. The receding sea revealed that the submarine had been put completely out of action. Her periscopes were smashed as a result of the Canadian's salvoes, and her after hydroplane had become jammed, making it impossible for her to dive.

Submarine U-65 had no option but to surrender.

Some hours later, Flight Lieutenant Rawson Symes made a perfect landing off the Old Pier at Felixstowe. The tide was right, the wind was right to taxi easily into the slipway, and the sun shone—in fact Flight Lieutenant Symes was almost prepared to admit that the F.2A. was really "quite a good old boat—if you handle her right!"

HERE'S THE ANSWER

More Replies to Reader's Enquiries

TRACER BULLETS (Private T. Nolan, Stren-sall Camp, Yorks.). The first successful tracer bullets were produced in England early in 1916, using a mixture of one part magnesium to eight parts of barium peroxide. These bullets, officially known as the S.P.K. Mark 7 T, but more generally as the "Sparklet," were finally approved for issue to the R.F.C. in July, 1916, and thereafter were almost invariably used, in a proportion of one tracer to three ordinary bullets, in every Lewis drum and Vickers belt.

BUDGET (Colonel A. M. Zuloaga, Paris, France). The total British budget for military aeronautics for 1914 was £1,900,000, of which £1,000,000 was allocated to the R.F.C. and £900,000 to the R.N.A.S. The budget for the R.A.F. for 1937 was £88,588,600.

BAYS (L. Younger-Lee, Hoylake, Cheshire). The term "bay" as applied to an aeroplane means the space between two sets of interplane struts or between interplane struts and fuselage. Thus, both the Gloster Gauntlet and the De Havilland Moth are single-bay biplanes, whereas the Westland Wallace and the D.H. Dragon are two-bay types.

FORMATION STRENGTHS (S. B. Baron, Stony Stratford, Bucks.). The number of aircraft in a flight may vary from four to six, and the number of flights in a squadron from two to three, according to the nature of the unit's duties. Thus, R.A.F. fighter squadrons now comprise fourteen machines, whereas heavy bomber squadrons have only twelve. The largest R.A.F. squadron formation is the eighteen 'planes of a general reconnaissance squadron, and the smallest the six machines of a flying-boat squadron. There is no fixed number of squadrons to an aerodrome, as

this is purely a matter of administrative convenience.

AIRCRAFT SPEEDS (P. J. Cutler, London, S.W.16). (1) The Boulton Paul Superstrand had a top speed of 190 m.p.h. at a height of 15,000 ft. The Blackburn Shark's best speed is 152 m.p.h. at 5,500 ft. (2) We cannot give you even an approximate figure for the Fairey Battle's bomb load, as this is a strict official secret.

DOPE (R. F. Smith, Finedon, Northants). The chemical formula for the various kinds of aero dope in use are much too complicated for home production, and most of them have to be prepared and applied at special temperatures. Any one of the several dope manufacturing companies would be willing to sell you the small quantity you require.

D.H.9 BOMB LOAD (R. Smith, London, S.W.). Bomb loads of D.H.9's varied according to their objectives. Bombs used were 20-lb. Coopers, 60-lb. 100-lb., 120-lb. and 250-lb. high explosive bombs, and a common load consisted of a rack of four Coopers for sighting and about 500 lb. of heavier bombs for the serious work. Bombs were carried in racks, under the wings, between fuselage and inner pair of interplane struts, and in those days were round, fat canisters with hemispherical noses, conical tails and four large fins.

THE H.P. 43 (D. Guest, Pinner, Middlesex). The Handley Page Type 43 was a military version of the Type 42, or Heracles class of air liner. Intended for troop transport, it was fitted with three Bristol Pegasus engines, had a span of 114 feet, a length of 78 feet 4 inches, and was 23 feet 10 inches high. Only one H.P. 43 was built, as the type was not adopted by the R.A.F.

FURY GUNS (John Flood, Folkestone, Kent). (1) The two fixed Vickers guns in a Hawker Fury are recessed, one on either side, into the top of the engine cowl and fire, by means of interruptor gears, between the revolving blades of the airscrew. (2) The Avro Anson reconnaissance monoplane has a top speed of 188 m.p.h. with wheels retracted.

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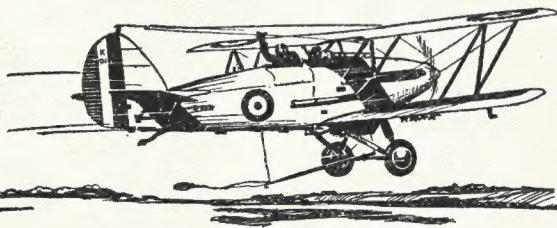
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STARTING with next month's issue, AIR STORIES is to be enlarged, and its price raised to 9d. a copy.

The increase in price is being made with great reluctance, but the recent rapid rise in the cost of paper supplies—nearly 50 per cent. in the past six months—has so increased production costs as to make the step unavoidable. At the same time, the extra 2d. per copy will, by a small margin, more than cover the increased production costs. This difference is too small to allow of a lower selling price than 9d.—a magazine selling at 8½d. or 8¼d. would be unwelcome both to readers and to newsagents—but, in bulk, it will enable us appreciably to enlarge the magazine and to effect a number of those improvements which we have had in mind for some time past, but whose expense we have hitherto been unable to justify.

The small surplus arising from the increased selling price will, therefore, be returned to the reader in the form of an enlarged and improved magazine, and, though we realise that the increase in price will be a disappointment to many, we feel confident that all our readers will appreciate our frank explanation of the position and will continue to support the magazine as loyally as they have always done in the past. And they may be sure that just as soon as the cost of paper returns to its normal level so will the price of AIR STORIES at once be reduced to its original figure.

Two Models in One Issue

AND now for some indication of what readers of the new AIR STORIES are going to get for their extra two pence a month.

In the first place, the greater number of pages will allow of printing more and longer stories and articles, and each issue will contain at least nine or ten separate features of fact or fiction, in addition to all the usual special sections such as the "Here's the Answer," "Contact" and Book Reviews columns. Illustrations, and special sketches such as the "Bulldog Breed" page in this issue, will be more frequent than hitherto, and model aircraft enthusiasts will be pleased to learn of an important improvement in their section of the magazine, by which two famous types of aircraft—a Great War machine and a modern warplane—will be featured together in each issue hereafter.

So much for generalities. Now for details of the contents of the next issue of AIR STORIES, the first to be published at the new price.

An outstanding feature will be a long complete story of an air war over England as it might be waged to-morrow. The time is 1938, and the author, Mr. J. H. Stafford, whose thrilling stories of the R.A.F. in action on the North-West Frontier have made him one of AIR STORIES' most popular writers. Mr. Stafford is a former member of the Royal

AIR STORIES

Air Force, and in this vivid tale of England's invasion from the air he draws on his expert knowledge of the Service to paint a realistic and vastly exciting picture of the R.A.F. of to-day in action, using all the latest weapons of modern aerial warfare.

Another great event in the same issue is the return of "Armourer Sergeant," author of those two fine articles, "Guns of the War Days" and "Air Guns of To-Day." This time he deals with the variety of bombs used by aircraft during the Great War, and his authoritative account of the evolution of air bombing from 1914 to 1918, and of the types and structure of the many kinds of bombs used by both the Allies and by Germany, makes one of the most informative and interesting articles we have ever published.

Another "topp-liner" is "The Ace of Twisters," by Wilfrid Tremellen, a great long adventure of the famous Three Squadrons. The Three Squadrons vie with the Coffin Crew as the most popular institution yet created by an AIR STORIES author, and the unusual theme of this particular adventure makes it one that will long be remembered.

A War Story by an R.F.C. Ace

THE same issue will also introduce to readers of AIR STORIES a famous British "ace," victor in more than twenty decisive aerial combats and holder of high awards for gallantry in action. Modestly he prefers to conceal his fame under the pen-name of "O.P. Flanders," but his gripping story of a Bristol Fighter squadron in action on the Western Front is alone enough to label him as a veteran war-flier, and as a writer of exceptional brilliance.

Yet another special attraction in the same issue will be an adventure of the Fleet Air Arm, contributed by that competent historian of the R.A.F. afloat, Lieutenant-Commander M. O. W. Miller, author of "D's for David" in this issue. There are other surprises, equally as good, in the March number, and, in particular, full details and drawings for the con-

struction of accurate scale models of two famous war-birds of yesterday and to-day, the Camel and the Hawker Fury II.

Even this by no means exhausts the full list of contents of the March issue, but it may at least suffice to show that the new and enlarged AIR STORIES is going to be well worth the extra four halfpennies that it will cost in future.

Subsequent issues will fully maintain the same high standard of interest, and, given the continued goodwill of our readers, will surely establish AIR STORIES more firmly than ever as the world's greatest air magazine of fact and fiction.

Flying with the Fleet

IN the present issue we welcome to the distinguished company of AIR STORIES' contributors an author who writes of the Fleet Air Arm with the authority of extensive personal experience of both the Royal Navy and the Royal Air Force.

Lieutenant-Commander M. O. W. Miller, author of "D's for David," in this issue, first went to sea in 1923 as a midshipman in H.M.S. "Repulse" and made a world cruise with the Special Service Squadron. As a sub-lieutenant he served for two and half years as navigator of a destroyer, and then, specialising as an observer, was appointed to H.M. Aircraft Carrier "Glorious" in 1930. The rest of his service was spent in the Mediterranean, three years in the "Glorious," flying in Ripons and those famous veterans, the Fairey 3F's, and a year in H.M.S. "Devonshire" as observer of a 3F which was launched by catapult.

His story this month will give many readers their first insight into the great difference that exists between overland flying and flying over the sea from a moving base with only wireless and the navigator's skill to save each flight from a watery end.

Commander Miller has the knack of writing a story that is both exciting and informative, and his yarns of the Fleet Air Arm are henceforth likely to be in strong demand among readers of AIR STORIES.

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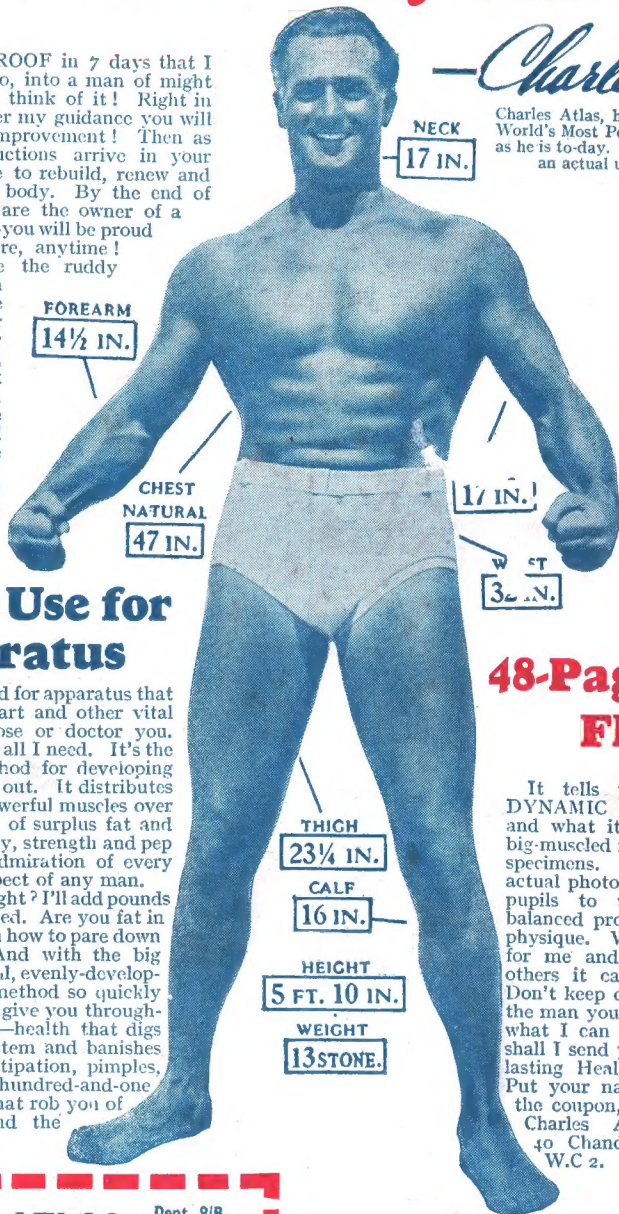


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